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ABSTRACT

This document explores risks to the health and lives of women and children that can be avoided or reduced by family planning. Emphasis throughout is on case studies and statistics from developing nations. Data are presented in expository and chart form. Information is presented in four chapters. Chapter I, Child Health and Family Planning, identifies factors which influence a child's chances of being born healthy, including number of children in a family, spacing between birthdates of children, and age of mother when each child is born. Chapter II, Women's Health and Family Planning, focuses on complications of pregnancy and childbirth among women in developing countries. Problems include the predilection of women to resort to dangerous illegal abortions when effective means of contraception are unavailable; death due to pregnancy (40-180 women in most developing nations died for every 100,000 children born in the mid-1970's); and ill health due to too many pregnancies. Chapter III, Family Planning in Developing Countries, discusses various methods of contraception and pinpoints areas of unmet need for family planning services. Specific problems include widespread use of inefficient methods of contraception, difficult access to contraceptive supplies, lack of information, and expense of traveling to a family planning site. The final chapter offers conclusions. A major conclusion is that family planning makes a substantial contribution to maternal health by making it possible for women to avoid high-risk pregnancies. The suggestion is offered that international organizations and governments of developed nations cooperate with health ministries in developing nations to develop family planning programs to meet each nation's needs. (DB)

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Family Planning: Its Impact on the Health of Women and Children

Researched and written by Deborah Maine

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The future of a country, and of humankind, depends on its children. For children to grow into healthy, able adults, they need good food, clean water, education, and medical care. But first of all, they need a good start in life. They need to be born healthy, to live through the perilous first few days of life, and the first few years, when they are especially vulnerable. They need mothers who are healthy and families that can give them care and attention. If they are born sickly, if their mothers are overburdened and ill, children's chances to survive and prosper are diminished. As the director of the World Health Organization (WHO) says: "Each stage of development builds on the one before and influences the next."[1, p.3]

Children younger than 15 and women in their childbearing years make up two-thirds of the people in the Third World.[1] Therefore, the health of women and children is an important part of national health. Developing countries have made great progress during the last few decades in protecting the health of infants and mothers. Millions of children have been immunized against deadly diseases. Millions of women have received better care during pregnancy and delivery. These advances have helped reduce infant and maternal deaths. But there is still much to be done. On average, people in developing countries still live 15 years less than people in industrialized nations.[2]

A large proportion of deaths in the Third World are among children. An estimated 15 million children younger than five die each year—the vast majority of them in developing countries.[3] Every year, about 500,000 women in the Third World die during pregnancy or childbirth, leaving at least one million children without mothers.[1] As large as these numbers are, for every child or woman who dies, many more barely survive and live on in poor health, often permanently weakened or handicapped.[4]

What can be done to reduce disease and prevent deaths? Clearly, better food, housing, sanitation, and education are essential. Medical services need to be extended to rural areas and urban slums. Preventing illness is more efficient, and less costly, than curing people once they are sick. However, in most developed and developing countries, preventive care has only recently begun to receive the attention it deserves.[5]

Preventive health care for mothers and children includes prenatal care, vitamin supplements, well-baby check ups and immunizations. It also includes family planning. As the WHO Expert Committee on Maternal and Child Health found, family planning can "favorably influence the health, development and wellbeing of the family and has a striking impact on mothers and children."[6, p.36]

Family planning improves the health of women by enabling them to have children when they are best prepared to have them. Women who become pregnant while they are still very young have a much higher risk of complications during pregnancy and childbirth than do women in their 20s. These complications can injure their health, even cost them their lives. The same is true of women who become pregnant near the end of their reproductive years. Having a large number of children increases the mother's risk of illness or death. The spacing of pregnancies—the time interval between pregnancies—is also very important. Having births too close together does not allow the woman's body to recover from the strain of pregnancy, childbirth, and breastfeeding. Furthermore, a short interval between births means that the woman will have to care for several young children at the same time—a difficult task under the best of circumstances.

Children, too, suffer when they are born close together in time, when the family is too large, when their mothers are too young or too old. Under these circumstances, they are more likely

to die in the womb or during the first few years of life, or to have their health and growth impaired.

Women all over the world know the dangers of ill-timed pregnancies and having many children. In India, Iran, Lebanon, the Philippines, and Turkey, 21,000 women were interviewed in a WHO study.[7] More than nine in 10 women said the health of the child and the mother are better if the child is born three years after the previous birth, rather than after an interval of only one year. About nine in 10 said that they believe that the health of mother and child are better if the family is small. More than nine in 10 know that contraception improves the health of women and children.

However, until very recently, women have not had convenient, effective ways of putting this knowledge into practice. When women do have access to modern methods of contraception, they generally choose not to have high-risk pregnancies. Most women do not want to have a birth every year, to begin childbearing when they are 15 or 16 years old, or still to be having children when they are over 35.

An example of what can happen when women have access to family planning can be seen in Chile. Contraceptives have been provided by the government and private agencies since 1965. Since that time, the proportion of women in their childbearing years using contraceptives has increased from only three percent to more than 20 percent, as Figure 1a shows. Between 1964 and 1979, the birth rate fell from 36 births to 22 births per 1,000 population per year (Figure 1b). Most of the decline in births has been among women having their third or later birth and among women younger than 15 or older than 30 (not shown here). These changes in childbearing patterns have played an important part in the dramatic reduction of both infant and maternal mortality in Chile in the past 15 years.[9,10] Figure 1c shows that between 1964 and 1979, infant mortality declined from more than 100 deaths per 1,000 live births to less than 40 deaths. During the same period, maternal mortality declined even more steeply, from more than 280 deaths per 100,000 live births to less than 80 (Figure 1d).

Changes similar to those in Chile are taking place in other developing countries, although such complete data are usually not available. Furthermore, although our interest is in health, we often need to rely upon mortality data, because they are the only ones available for large populations, across time, and in a variety of countries.

This chartbook will explore the many risks to the health and lives of women and children that can be avoided or reduced through the use of family planning. It will show that large numbers of women in developing countries have already begun to use contraception to space their pregnancies and limit the size of their families. However, it will also show that much more needs to be done. Millions of women in developing countries still do not have easy access to family planning services—a fact that has serious health consequences.

Figure 1a.
Percent of women using contraception, Chile, 1964-1978

Figure 1b.
Birth rates, Chile, 1964-1979

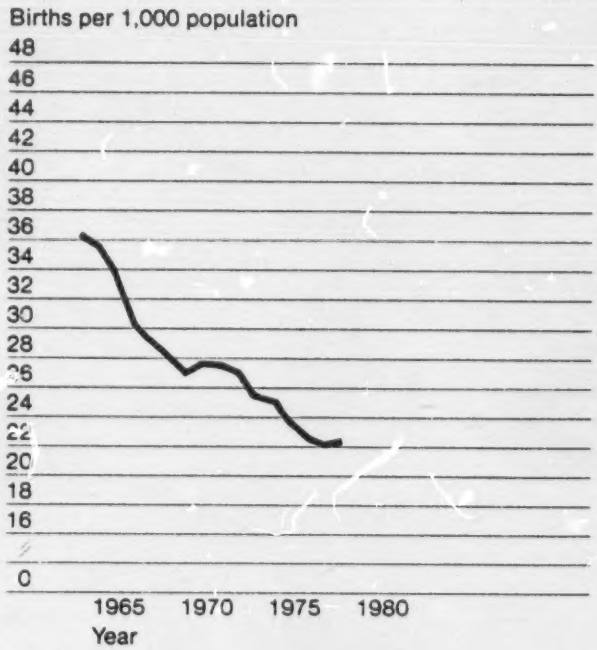

Figure 1c.
Infant deaths, Chile, 1964-1979

Figure 1d.
Maternal deaths, Chile, 1964-1979

Source: ref. 8

8

Chapter I
Child Health and Family Planning

A child's chances of being born healthy, of surviving the first few years of life and of growing well are reduced if:

Children in the family are born very close together in time.

There are already three or more children in the family.

The mother is younger than 20 or older than 35 when the child is born.

Family planning improves children's health by helping women to space their births, have smaller families, and avoid pregnancies at unfavorable ages. In countries where large proportions of women have already adopted family planning, the resulting changes in childbearing patterns have contributed substantially to recent declines in infant mortality.

When a woman has pregnancies close together, the likelihood increases that the pregnancy will end in miscarriage or that an infant born alive will die. As one expert on child health in developing countries says: "Medical workers, when caring for a mother and her young child, will come to realize that delaying the next conception and extending the birth interval are quite as important a part of health care as seeing that the latest child is adequately immunized."[11, p.300]

Studies in Hawaii and Bangladesh found that the highest rates of fetal death are among pregnancies that began less than one year after the end of the previous pregnancy.[12,13] Data collected in many countries by the World Health Organization and the Pan American Health Organization have documented an increase in deaths among infants born after short intervals.[7,14] Figure 2 shows this effect using information from India and Turkey. Whether they were Hindu or Muslim, urban or rural, infants born less than one year after the end of their mothers' last pregnancy were much more likely to die than were infants born after a longer interval.[7]

The risk to infant health posed by short birth intervals continues even after the first year of life. Figure 3 shows deaths among children aged 1-4 years in the Philippines and Lebanon.[7] Again, while death rates among children in rural and urban settings and among various religious and ethnic groups differ, the higher mortality among infants born after short birth intervals remains.

The higher rate of fetal and infant deaths may be due, in part, to the lack of time for the mother's body to fully recover after the last pregnancy—sometimes called the "maternal depletion syndrome."[15] This may be especially important among women who breastfeed their children for long periods and among women who are malnourished and perform heavy physical work, as many Third World women do.[16] However, some of the ill effects of close birth spacing are probably due to the inability of families to care for several young children at the same time.

When two children are separated by only a short birth interval, not only the younger of the pair suffers. The health of the older child may be harmed as well. People in some countries have long understood this. For example, the word "kwashiorkor" is used in Ghana to describe the kind of malnutrition often seen when a child is weaned from the breast too early because the mother is pregnant again.[17] Breastfeeding is now known to be one of the most important factors in infant health in developing countries. Anything which cuts short the period of breastfeeding may endanger the health of the infant.[18] Children who are weaned too early are much more susceptible to malnutrition and infection.

The risk to the health of the older of a closely-spaced pair of children was demonstrated in a study in the town of Candelaria, Colombia.[19] Nearly three-quarters of all children had a brother or sister less than two years younger than themselves. Such children were much more likely to be malnourished than were children who were followed by a birth interval of at least three years.

Figure 2.
Infant deaths, by number of years between births, India and Turkey, 1971-1975

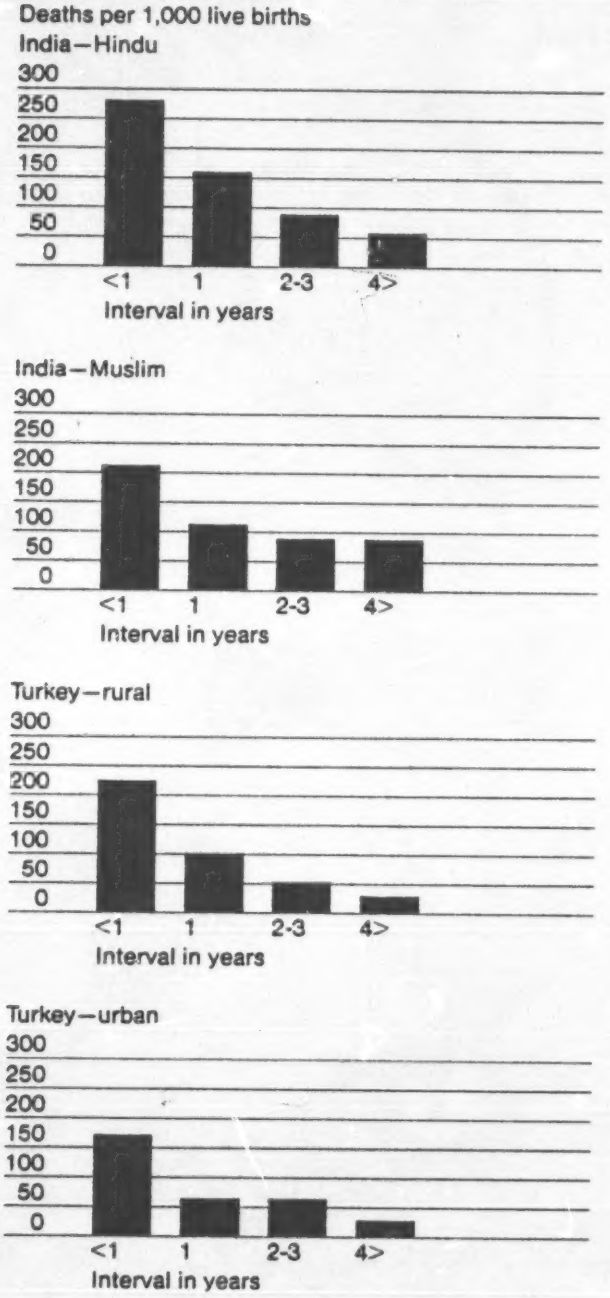

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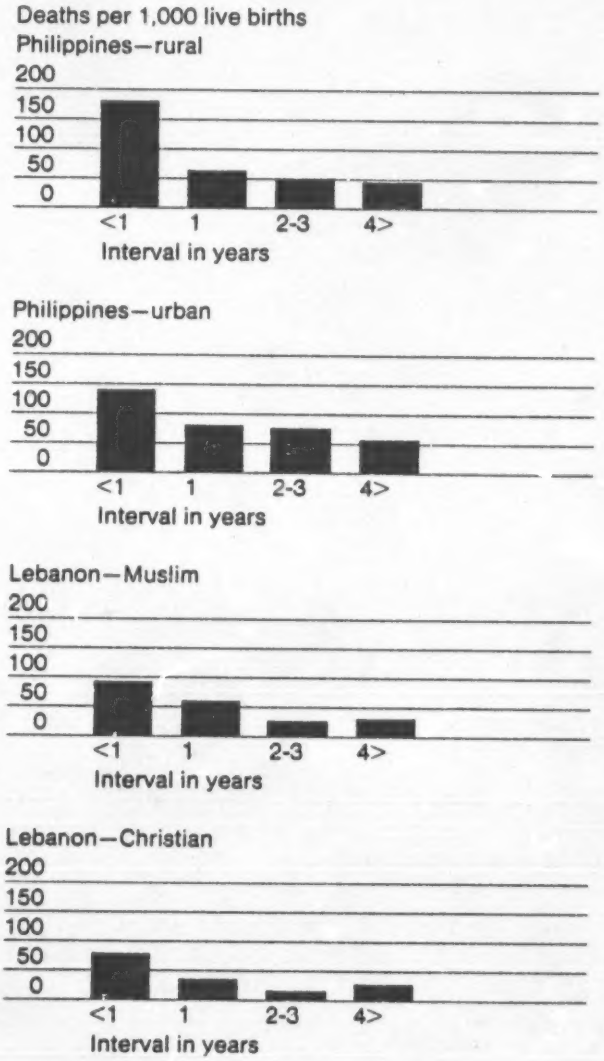
Figure 3.
Child deaths, by number of years between births, the Philippines and Lebanon, 1970-1975



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The number of children a woman has already had affects her chances of having a successful pregnancy and a child who survives.

Fetal death rates increase with birth order.[12,20] Figure 4 shows deaths in the last two months of pregnancy and the first week of life in Tientsin, China. Women who were having their third or later delivery had more than four times as many miscarriages and early infant deaths as women who were having their first or second birth. Other studies on developing countries have found that fetal death rates increase after the second and third pregnancies.[22]

Even infants who survive the first few days appear to be at a disadvantage if their mothers already have had many births. Figure 5 shows deaths in the first year of life in El Salvador, Chile, and England and Wales. In these countries (and in many more not shown), after the third or fourth birth rates of infant death rise steeply (even though the proportion of children who died in their first year is several times higher in El Salvador and Chile than in England and Wales). In fact, in England and Wales this pattern has remained stable over decades, although infant deaths are much less frequent now than they were 30 years ago.[24] Thus, although improved living conditions and medical care greatly reduce the overall level of infant mortality, the effects of birth order remain. In England and Wales today, deaths during infancy are more than twice as common among poor families as among families at the top of the social scale, yet in each social class the effect of birth order can be clearly seen.[23]

Figure 4.
Fetal deaths during the last two months of pregnancy and deaths during the first week of life, by birth order, Tientsin, China, 1978

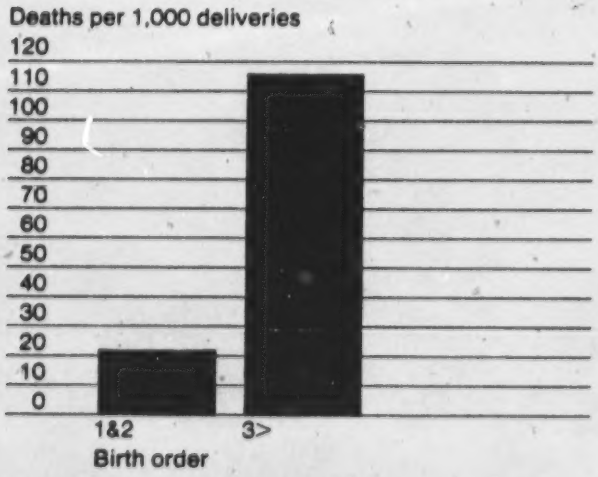

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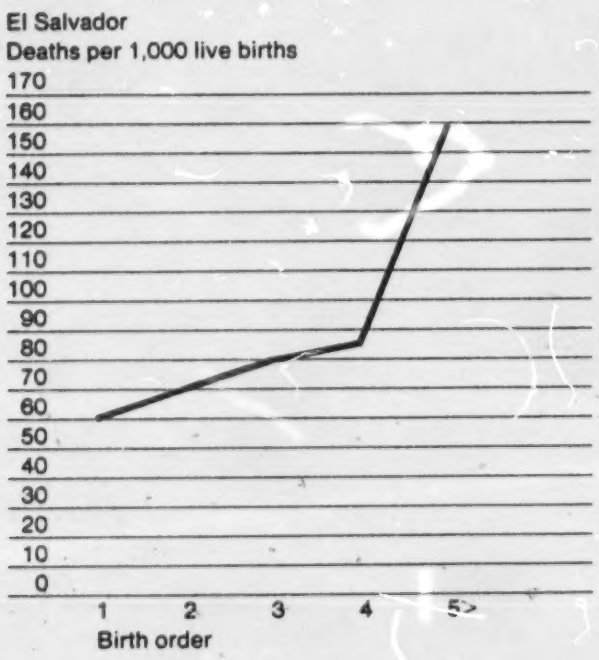
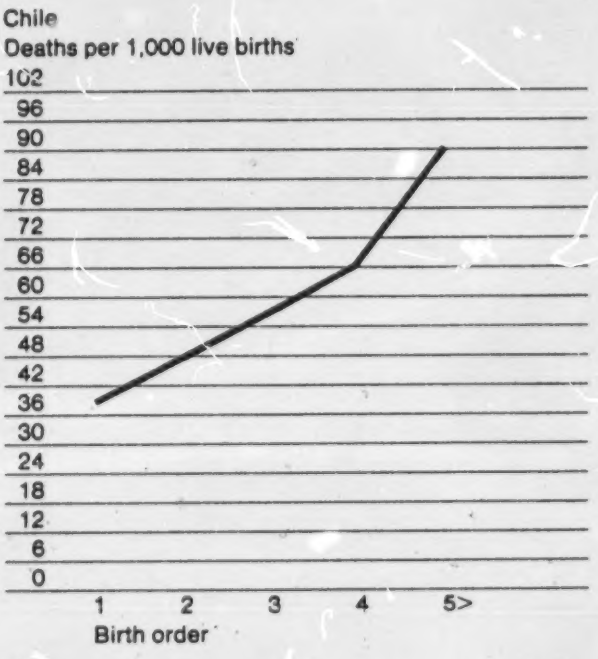
Figure 5 also shows the high rates of infant death that prevail in many parts of the Third World. While conditions have improved in many areas since 1970, the experience of El Salvador and Chile shown here is still representative of many parts of the developing world.

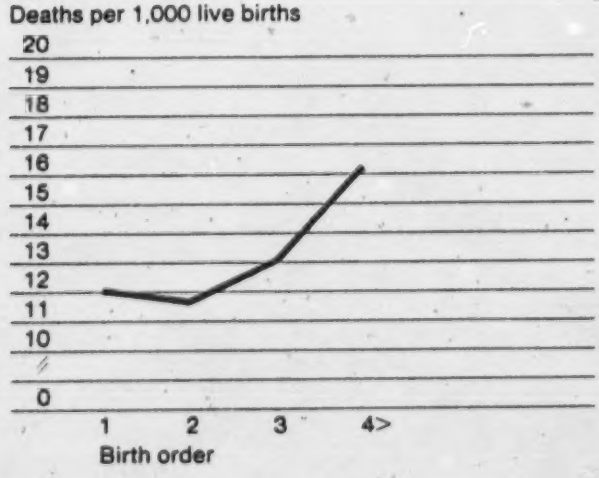
While we do not know all the reasons for this strong and consistent relationship between birth order and child health, part of the explanation may lie in the birthweight of the infant. Low birthweight infants are known to have a much higher risk of dying during the first year; they may also have more health problems than other children, if they survive.[1] Beginning with the fourth child the proportion of babies of low birthweight increases steadily.[25,26]

In developing countries, where so many children are malnourished, part of the effect of birth order on child health probably operates through nutrition. For example, the Candelaria, Colombia study shows that birth order (as well as birth spacing) affects the nutritional status of children. The

Figure 5.
Infant deaths, by birth order, El Salvador and Chile, 1968-1970, and England and Wales, 1977





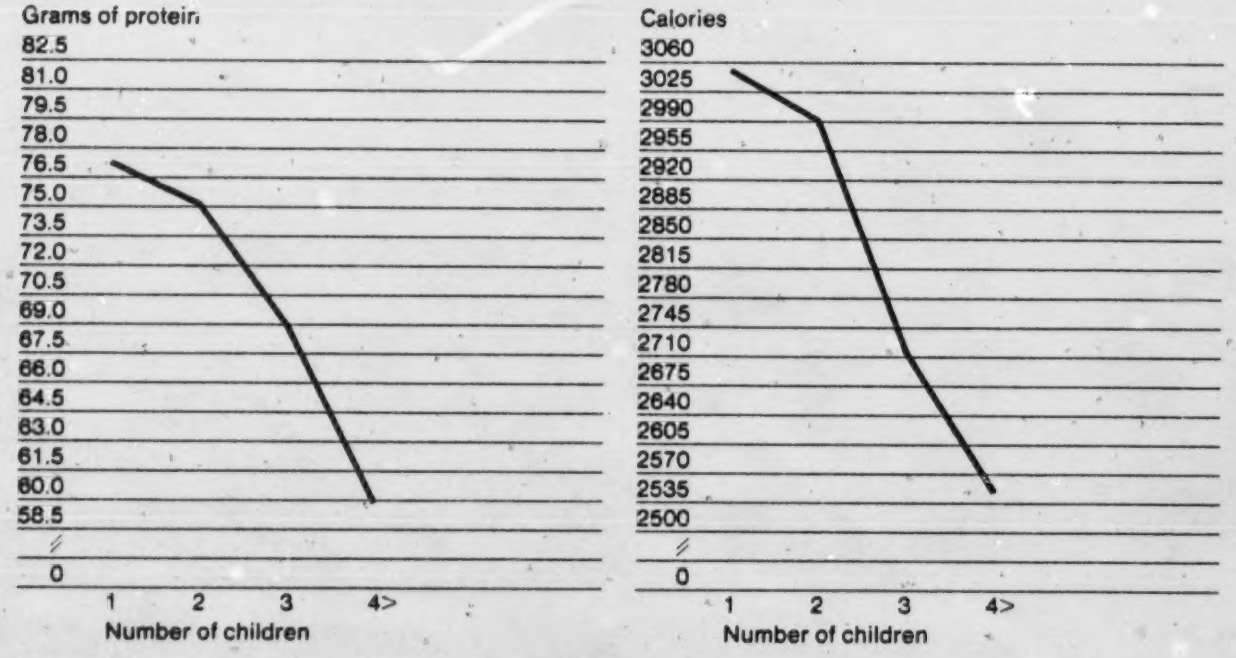


Source: refs. 14, 23
See notes

more children in the family, the larger the proportion of the family income spent on food, but the less food per person.[19] This results in a higher rate of malnourished children in large families, as a detailed study of the families of textile workers in India demonstrated. Since all of the families had similar income, the more children in the family, the less food each person received, as Figure 6 shows. The investigator noted that the difference in diet between families with three or fewer and families with four or more children was large enough to make the difference between an adequate and an inadequate diet. Consequently, the more children in the family, the higher the proportion diagnosed as malnourished.

These studies indicate that large family size and short birth spacing interact with poor nutrition to create a group of children at very high risk of illness and death. A WHO Scientific Group explains how this may work: "The incidence of diarrheal

Figure 6.
Amount of protein and calories consumed daily, per person, by number of children in the household, India, 1968

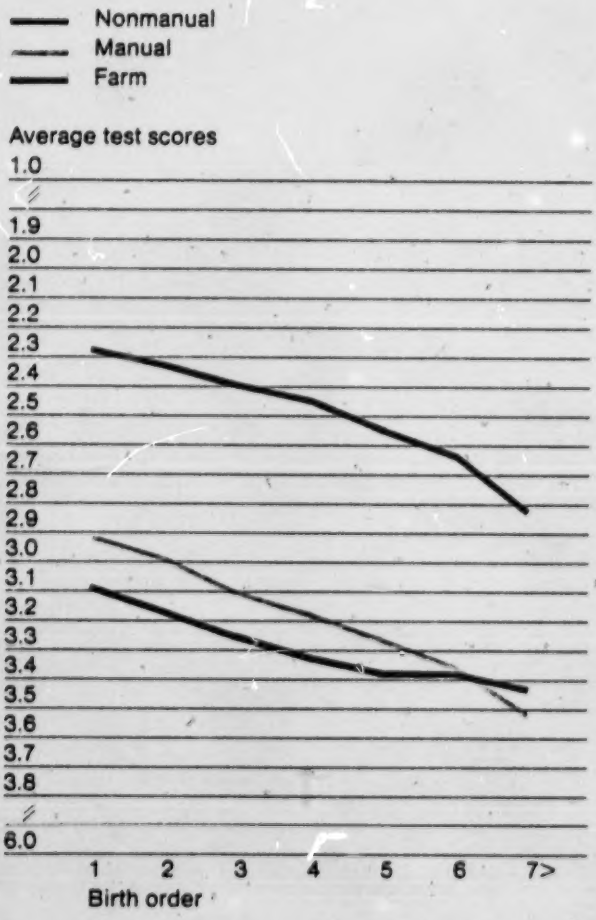


Source: ref. 27
See notes

disease, the principal cause of death in less developed countries during the first two years of life, is clearly associated with poor weaning practices, and early weaning often follows a short pregnancy interval. The ensuing malnutrition, which reaches its peak during the second year of life, is also related to the high incidence of other infectious diseases....The health impact of spacing is assuming increasing importance in developing countries, where [prohibitions against] the early resumption of cohabitation are losing their force in many communities."[28, p.13]

As might be expected, the same factors that affect children's health also seem to affect their development. Children in large families and children born close together grow less well, both physically and intellectually, than other children. The decline in intelligence test scores as family size increases has been vividly demonstrated in studies of large numbers of children in Scotland, England, France, and the United States.[29] One of the largest studies to document the effect of birth order on intelligence was done in the Netherlands; 400,000 19-year-old men registering for military service were compared by family size, birth order, and socioeconomic group. Figure 7 shows the significant decline in intelligence test scores with increasing birth order. Furthermore, although there are large differences in performance among different socioeconomic groups (as is usually the case), the decline in scores with increasing birth order is apparent in all groups.

Figure 7.
Intelligence test scores among 19-year-old men, by birth order and socioeconomic group, the Netherlands, 1953-1956



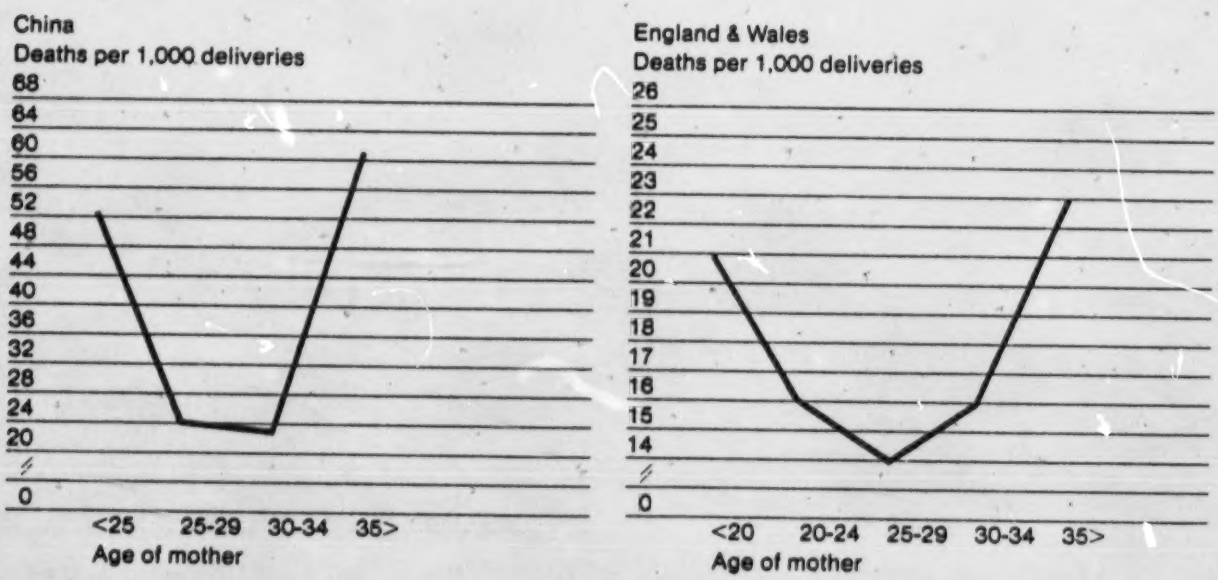
Source: ref. 30
See notes

The health of infants is affected by their mothers' age when they are born. In general, the most favorable age for a woman to have children is in her 20s.

Fetal deaths are less common among women between the ages of 20 and 34 than among older or younger women.[31,32] Figure 8 shows deaths during the last two months of pregnancy and the first week of life, by mothers' age, in China and in England and Wales. Information on women younger than 20 is not given separately in China, but in England and Wales it is clear that the risk is much higher for such women than for women only a few years older.

The risk of death during the first year among children born to women of different ages is shown in Figure 9. These data are taken from a study of more than 35,000 child deaths in the Western Hemisphere. The researchers concluded that their results "definitely indicate the importance of the mother's age and parity as determinants in the survival and future health of the child."[14, p.2] Of the 15 areas studied, Chaco Province in Argentina had the highest rate of infant mortality and the

Figure 8.
Fetal deaths during the last two months of pregnancy and deaths during the first week of life, by age of mother, Tientsin, China, 1978, and England and Wales, 1977

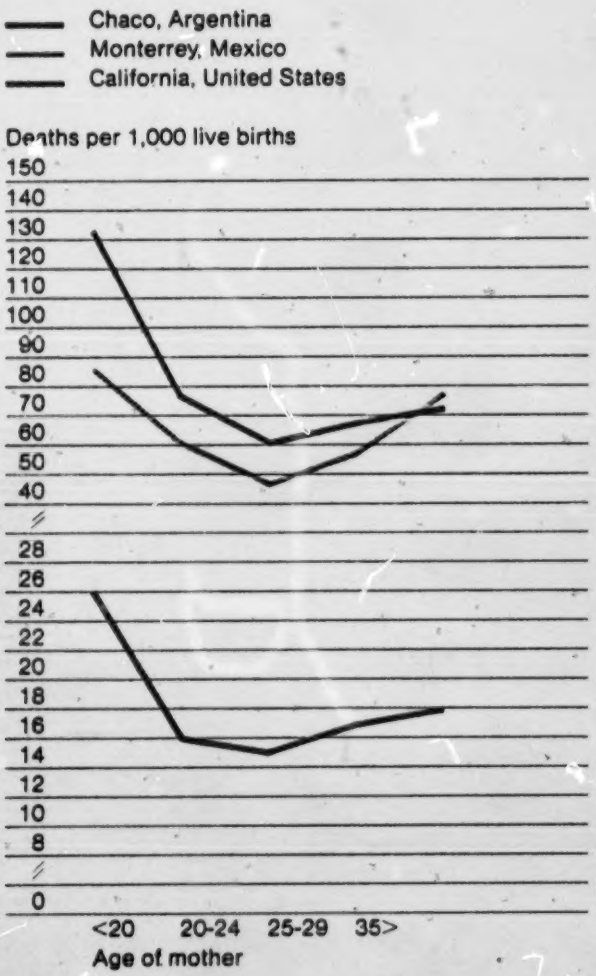


Source: refs. 21, 23

state of California, United States, had the lowest. The infant mortality rate in Monterrey, Mexico was intermediate. Despite the differences in death rates, the pattern in relation to maternal age remained similar, with women in their late 20s having the lowest rates of infant loss.

The very high rate of infant loss among women younger than 20 is probably partly due to their inability to care for their children. In the United States, for example, teenage mothers often find themselves in difficult economic circumstances.[33] In addition, very young women may not have the experience and maturity to cope with motherhood, especially if they have several children. A United States study, which followed more than 5,000 infants through their first year, found that those born to women younger than 18 were most likely to have a serious illness and to be hospitalized.[34]

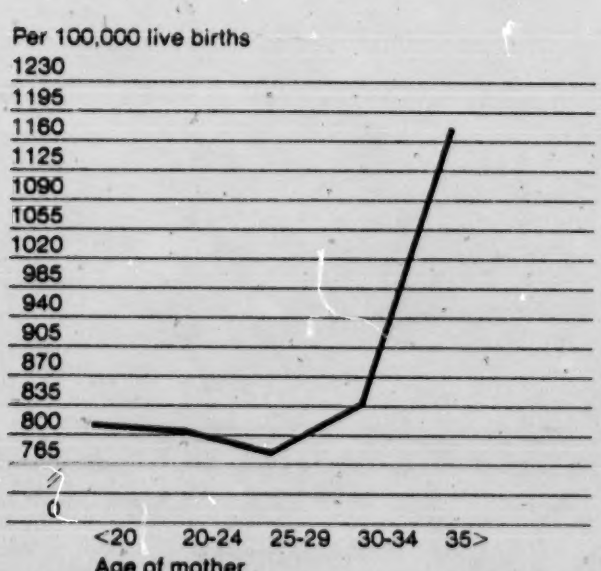
Figure 9.
Infant deaths, by age of mother, Argentina, Mexico, and the United States, 1968-1970



Source: ref. 14

Children born to older women have a much greater risk of having birth defects than do those born to younger women. Figure 10 shows how the risk of malformations rises steeply among infants born to women in their late 30s. Defects that increase with maternal age include heart defects, cleft palate and lip, and Down's Syndrome (a severe, lifelong mental and physical disability sometimes called "mongolism").[36] The proportion of infants born with Down's Syndrome rises geometrically among women older than 30.

Figure 10.
Infants born with malformations, by age of mother, United States, 1973-1974



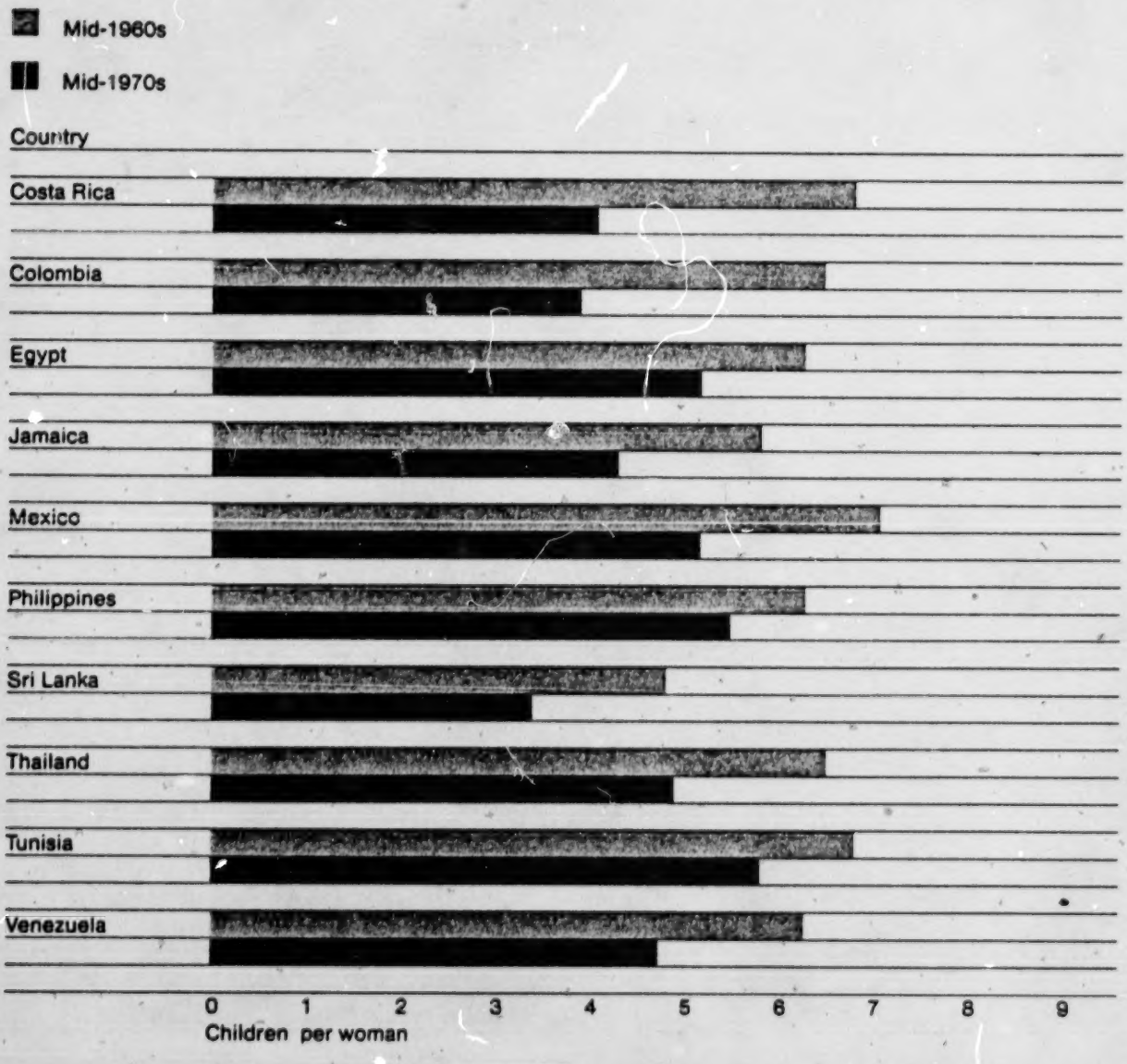
Source: ref. 35

Because of the risks to fetal and infant health linked with short intervals, high birth order, and maternal age, family planning can make a substantial contribution to infant health in developing countries. When women have access to family planning information and contraceptive methods, large proportions of them choose not to have births close together, large families, and births when very young or old.

Figure 11 illustrates how family size has declined in recent years, using total fertility rates* for the mid-1960s and 1970s. In nine of these 10 countries, the number of children an average woman would be expected to have has declined by at least one child. (In the Philippines, the decline was slightly less.) In several countries (Costa Rica, Colombia, and Mexico) the decrease was two or more children per woman.

*The total fertility rate is the number of children an average woman would be expected to have if she went through life bearing children at the current rate for each age group at the time of the study.

Figure 11.
Total fertility rates, mid-1960s and mid-1970s



Source: ref. 37
See Notes

Figure 12 shows the decline in childbearing among women aged 15-19 for the same countries and the same period of time. In Colombia and Egypt, births among very young women fell by more than one-half in this decade. In four other countries, the declines were one-fifth to more than one-third. In the rest of the countries the declines were about one-tenth—still a substantial change for so short a time.

Figure 13 shows the decrease in births among women 30-34. In half of the countries the declines were 20-40 percent. In Costa Rica, fertility among women of this age group fell by more than one-half. In the other three countries shown, the de-

Figure 12.
Percent decline in births among women aged 15-19, mid-1960s to mid-1970s

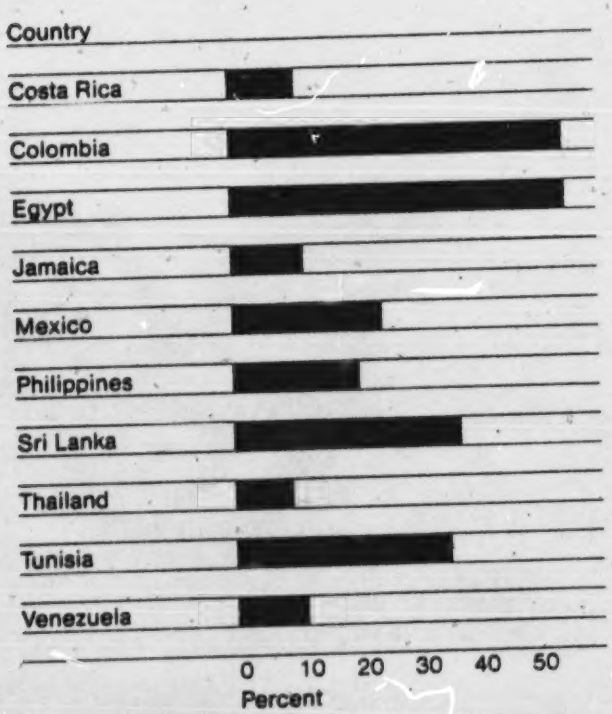


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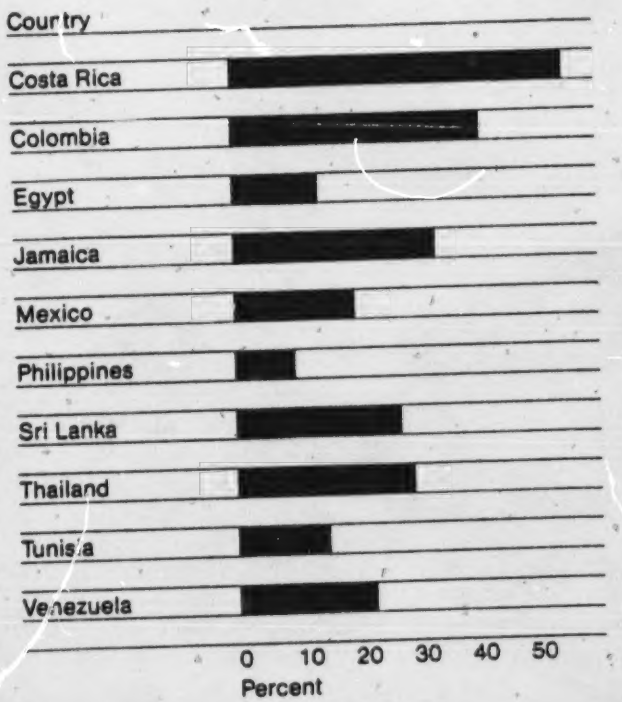
Figure 13.
Percent decline in births among women aged 30-34, mid-1960s to mid-1970s

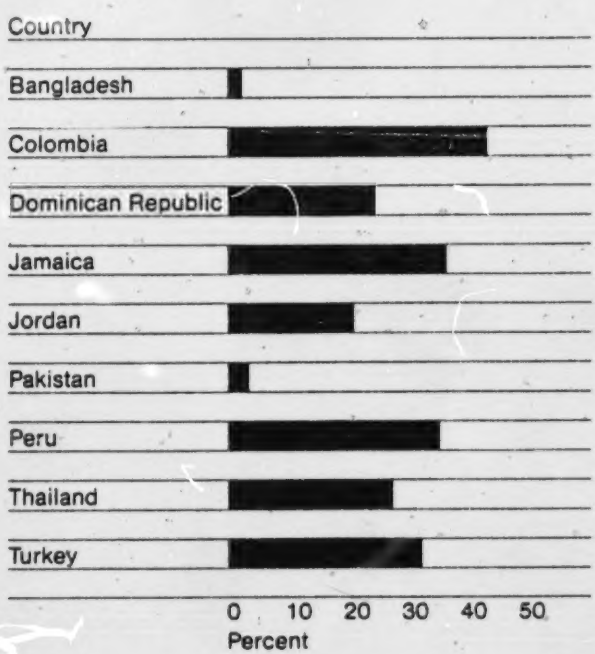


Source: ref. 37
See notes

clines were 10-15 percent during the decade.

Women in developing countries use contraception not only to prevent unwanted births; they are increasingly using it to space wanted births, as data from the World Fertility Survey demonstrate. Figure 14 shows the proportions of women who say they want more children that are using contraception. In Colombia, more than four in 10 women who want future births are using some method of

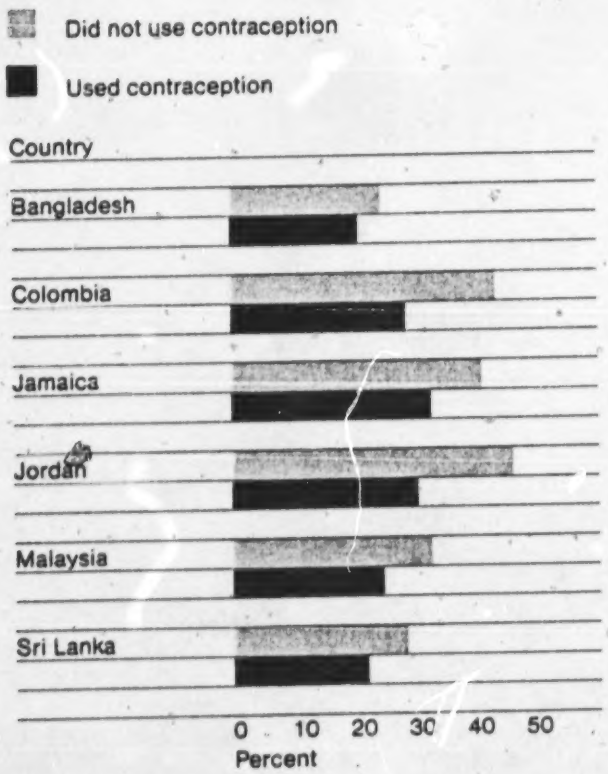
Figure 14.
Percent of women who want more children that are using contraception, 1975-1978



Source: refs. 38-46
See notes

contraception; in Jamaica, Peru, and Turkey, the proportion is more than three in 10; in the Dominican Republic, Jordan, and Thailand, more than two in 10. Only in Bangladesh and Pakistan are few women using contraception to space their births.

Figure 15.
Percent of women whose last two pregnancies were less than 24 months apart, by use of contraception during the pregnancy interval, 1974-1978



Source: refs. 38, 39, 41, 42, 47, 48
See notes

Women who use contraceptives are more successful than other women in spacing their births. Figure 15 shows the proportions of women in various countries whose last two pregnancies were less than two years apart. The greatest difference between women who used contraception in the interval and those who did not is found in Jordan; 31 percent of contraceptors had a birth interval of less than two years, compared with 47 percent of noncontraceptors. The country in which use of contraception made the least difference is Bangladesh, where 21 percent of contraceptors and 25 percent of noncontraceptors had short birth intervals. Even so, this represents a decrease of one-sixth.

Kenya is the first African country to complete its part of the World Fertility Survey. While the information presented in Figure 15 is not yet available for Kenya, preliminary data show that the average interval between births was almost five months longer for women who used contraception (18.2 months) than for women who did not (13.7 months).[49]

The impact of declines in high-risk pregnancies on infant mortality has been analyzed in a number of countries. In Costa Rica, for example, birth rates have declined rapidly in recent years (in large part due to the widespread availability of contraceptives). Between 1960 and 1977, births of fifth and higher order and births among older women decreased sharply.[50] During the same period, the infant mortality rate fell by almost 60 percent. An estimated one-fifth of this decline is due to the changes in childbearing patterns. In the United States, one-half of the decline in infant mortality during 1960-1970 is attributed to the increasing concentration of births among women of more favorable age and family size.[51]

Chapter 2
Women's Health and Family Planning

Complications of pregnancy and childbirth are still a major cause of death among women in developing countries. Women's chances of having such complications (and, therefore, their chances of dying) are increased when:

They have already had three or more children.

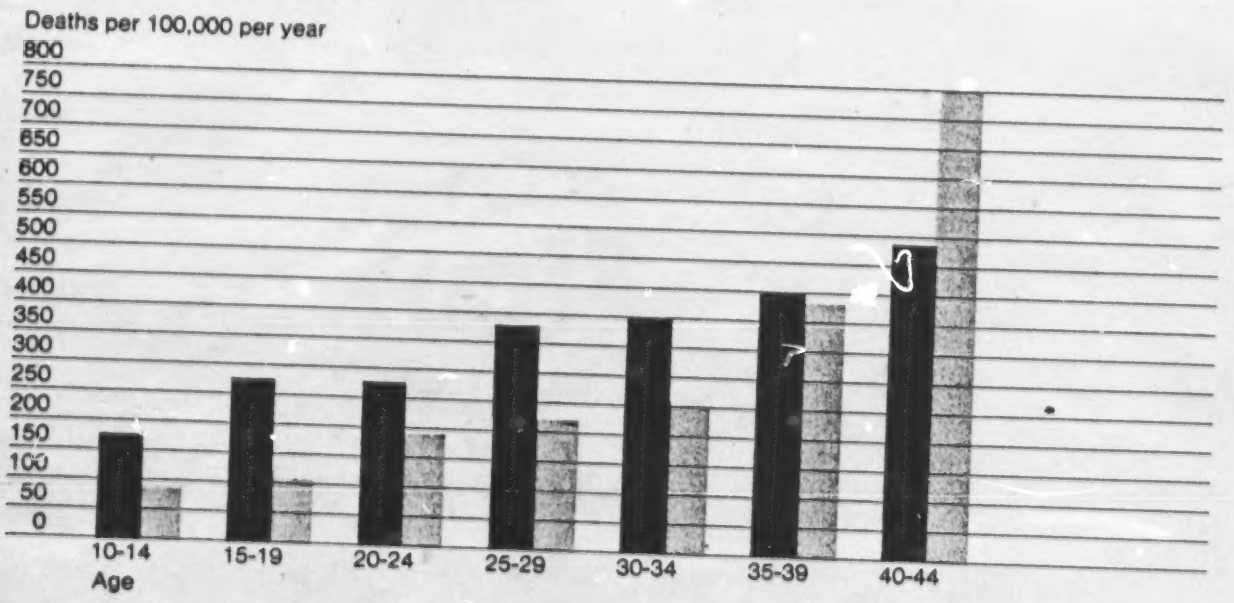
They are younger than 20 or older than 30.

Family planning improves the health of women by helping them to avoid high-risk pregnancies. In addition, when women have access to effective methods of contraception they are less likely to resort to dangerous illegal abortions in order to control their fertility. Therefore, adoption of contraception can prevent many needless deaths among women in the Third World.

Traditionally, poor women in developing countries were either pregnant or breastfeeding during most of their reproductive years.[27] Their bodies did not have time to replenish stores of vital nutrients. This is still true of a great many women in the Third World, and it has grave consequences for their health. In most developing countries in the mid-1970s, 40-180 women died due to pregnancy or childbirth for every 100,000 children born.[52,53] In some areas, rates are even higher. By comparison, during the same period there were fewer than 20 maternal deaths per 100,000 live births in most parts of Europe.

Figure 16 shows death rates among women and men of various ages in Matlab, Bangladesh, and the proportion of deaths among women re-

Figure 16.
Deaths among women from pregnancy and childbirth, and from all other causes, and deaths among men from all causes, by age, Matlab, Bangladesh, 1968-1970

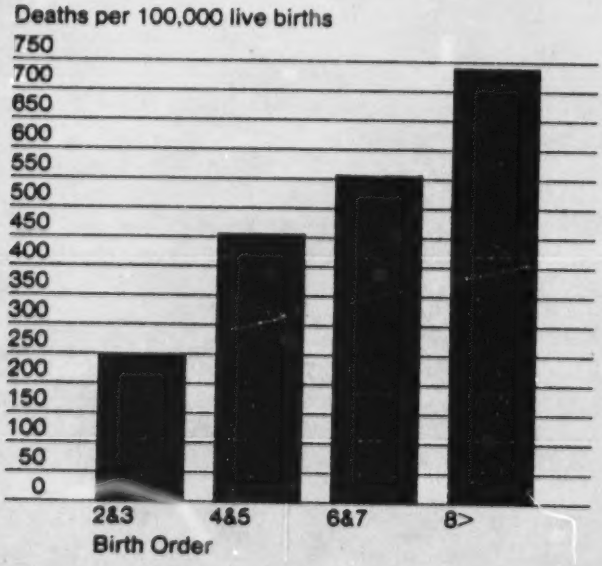


Source: ref. 54

lated to pregnancy and childbirth. Pregnancy and childbirth were the most important causes of death among women aged 15-19. Furthermore, high maternal mortality raised the overall death rate for women well above that for men in the age groups between 15 and 39. Another way to look at these data is to express maternal deaths as a proportion of all deaths among women (not shown). Among women aged 15-19 almost six in 10 of all deaths were related to pregnancy and childbirth; among women 20-29, more than four in 10; among women 30-34, more than three in 10. For women of all ages together, more than one in four deaths were related to pregnancy and childbirth.

The effect of pregnancy and birth on a woman's health is, in part, determined by the number of pregnancies she has had. Figure 17 shows this effect in more than 200 villages in Matlab, Bangladesh. Among women having their fourth or fifth birth (not a very large number of births for developing countries), the risk of death was almost double that of women having their second or third birth. Women having their eighth or later birth had three times the risk of death as women having their second or third birth. Deaths were also very common among women having their first birth (not shown), in part because many of them were very young.

Figure 17.
Maternal deaths, by birth order, Matlab, Bangladesh, 1968-1970



Source: ref. 54

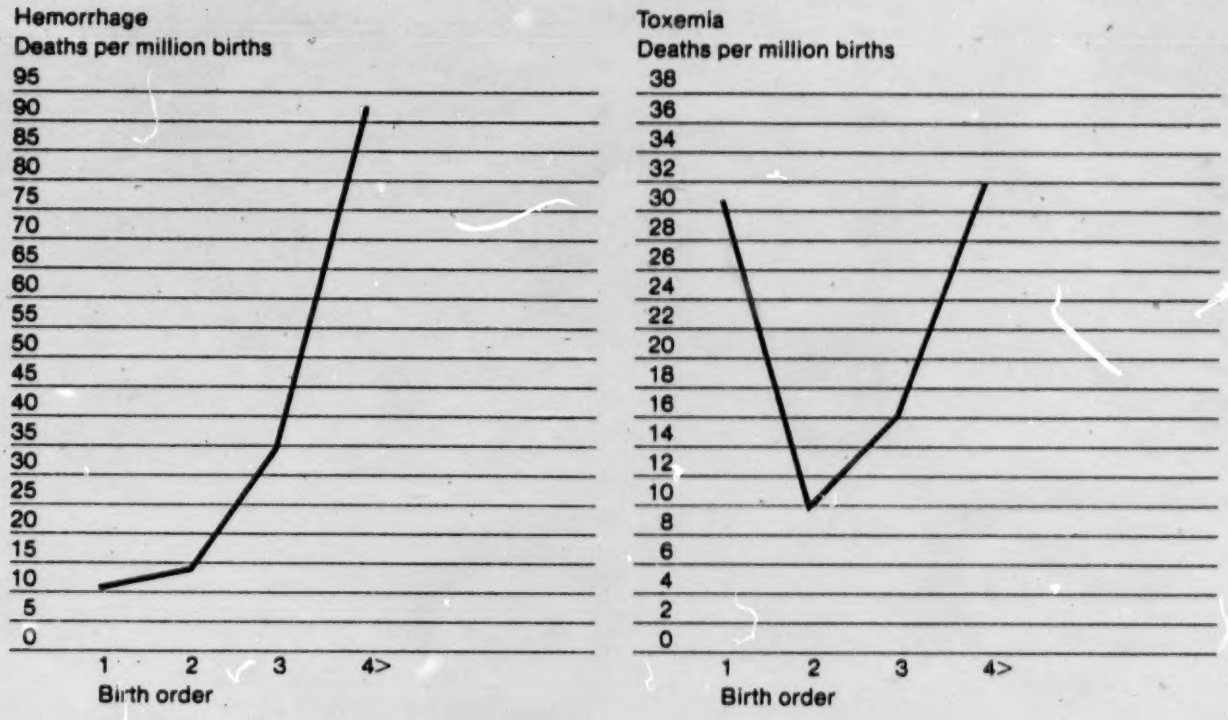
Maternal deaths increase with birth order because many complications of pregnancy and childbirth rise sharply among third and later births. An estimated 25 million women in developed countries have such complications every year.[55]

Figure 18 shows maternal deaths from three major complications of pregnancy in England and Wales during 1973-1975. Deaths from hemorrhage (uncontrolled bleeding) and from pulmonary embolism (blood clots in the lungs) are especially common among fourth and higher order births. Toxemia (very high blood pressure during pregnancy that can lead to convulsions) is about equally high among first and fourth and later births, but much lower among second and third births. Figure 18 also shows deaths from all causes combined. Fourth and higher order births carry many times the risk of death of first or second births, even in a country where medical care is available and free to all people.

Other complications that increase with birth order are problems with the placenta and umbilical cord, collapse and tearing of the uterus, abnormal birth position of the fetus, and anemia.[7,22,27,28,31,57]

These complications kill many women, but weaken and injure many more. For example, anemia makes a person more vulnerable to many diseases and infections. All of these complications are serious, even if they occur in a hospital. However, they are much more serious when a woman is delivering her baby at home, with only relatives or an untrained midwife to help her, or when the nearest medical care is either too far away or too expensive—situations common in most developing countries.

Figure 18.
Maternal deaths, by cause and birth order, England and Wales, 1973-1975



Source: ref. 56

Maternal Age

Studies from all over the world show that the risk of complications of pregnancy and delivery (and, consequently, the risk of death) are affected by a woman's age.[31] This is true regardless of the level of maternal mortality in the country.

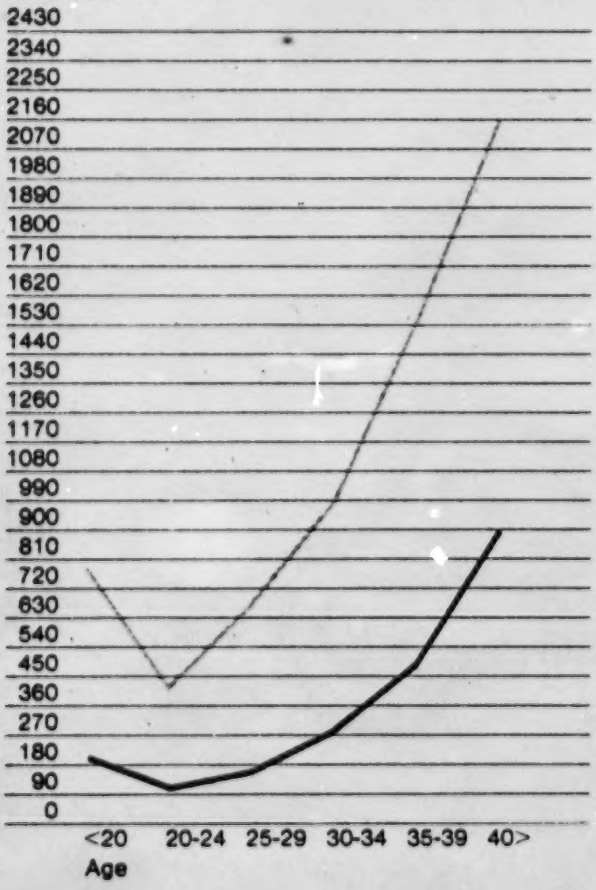
Figure 19 shows maternal deaths in Venezuela in 1966-1968 and in England and Wales in 1973-1975. Despite the fact that rates in England and Wales are so much lower than those in Venezuela, the lowest risk of death in both countries is among women in their 20s. In both countries, women 40 or older had at least five times the risk of death of women aged 20-24. This shows that the increased risk of death linked to older maternal age is not confined to women in poor countries. Even though maternal death rates are falling in many developing countries, women over 30 still run a considerably greater risk of death from pregnancy than do younger women.

Where data are available, this pattern can be seen within a single country. Figure 20 shows that maternal death rates fell considerably in Sri Lanka between 1956-1958 and 1966-1968. However, the pattern of deaths by age remained. In both time periods, women 30-34 were more than one-third more likely than women aged 20-24 to die giving birth. Women 40 or older were more than three and one-half times as likely to die as were women in their early 20s.

Figure 21 shows how deaths from major complications of pregnancy vary with age. For hemorrhage and toxemia (as for all causes combined), women in their 20s have the lowest rates, while rates among women 30 and over rise sharply. Although these charts look quite similar to those showing deaths from complications of pregnancy by birth order, maternal age and birth order have independent effects. For women in each age group, those having their second birth are least likely to die. For women in each birth order group, women in their 20s are less likely than other women to die during pregnancy or delivery.[56]

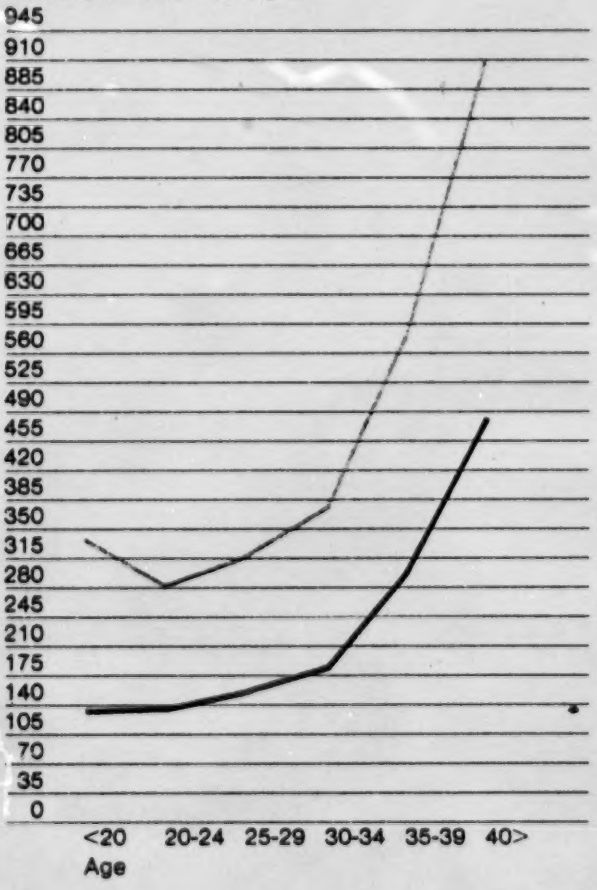
While maternal deaths from infection (sepsis) are no longer common in the developed countries, they are still a major problem in the Third World. The risk of infection is much higher among older women than among women in their 20s.[31]

Figure 19.
Maternal deaths, by age, Venezuela, 1966-1968, and England and Wales, 1973-1975



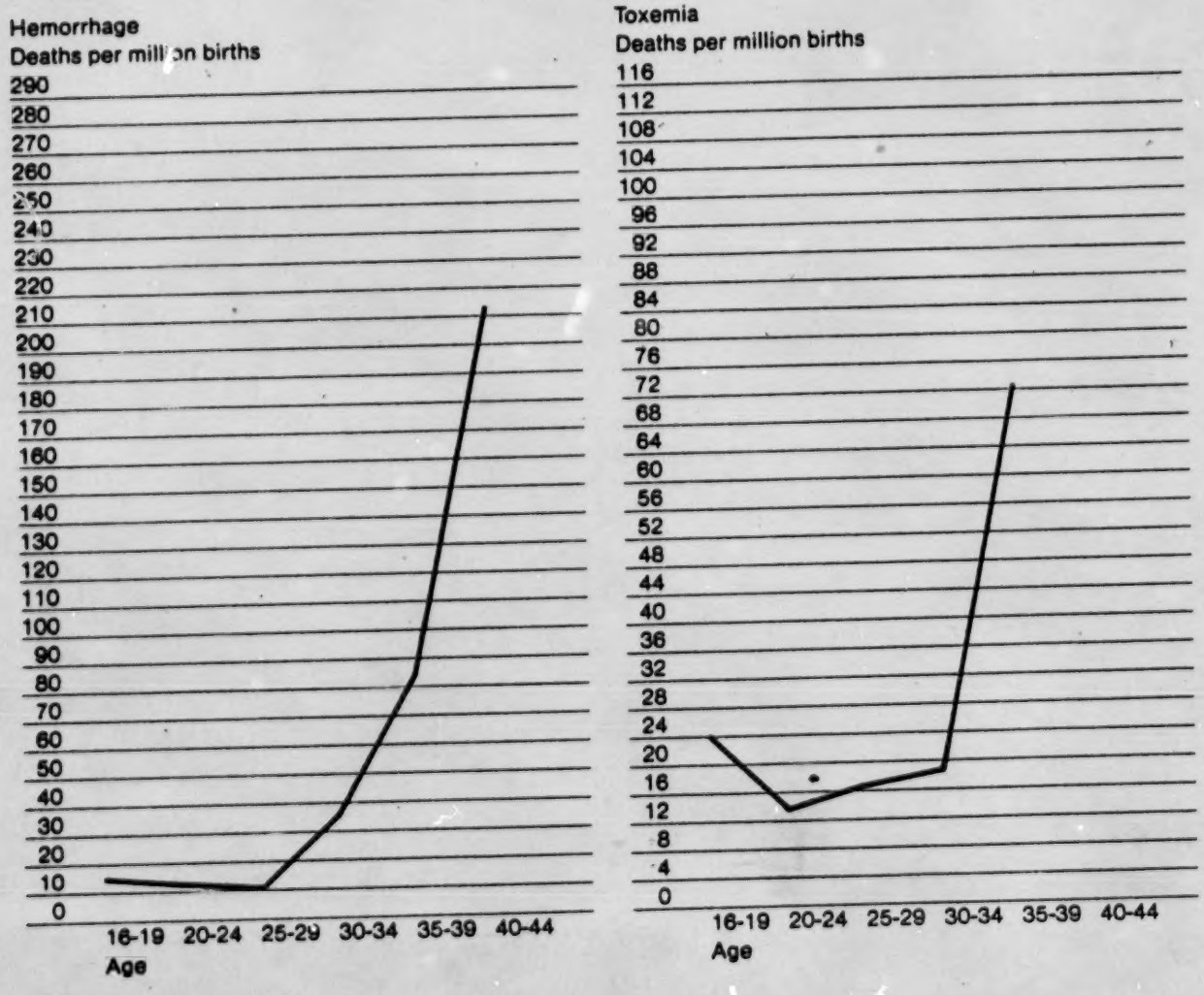
Source: refs. 52, 56
See notes

Figure 20.
Maternal deaths, by age, Sri Lanka, 1956-1958 and 1966-1968



Source: ref. 52
See notes

Figure 21.
Maternal deaths, by cause and age, England and Wales, 1973-1975



Source: ref. 56

Although many countries have adopted more liberal abortion laws during the last few years, in most developing countries induced abortion is still illegal or permitted only to save the life of the woman.[58] Even where it is legal, access to abortion may be limited by bureaucratic restrictions, distance, or expense. Consequently, an estimated 15-25 million women resort to illegal abortion each year rather than have unwanted births.[59] Many of these women do not have access to effective methods of contraception, which would have prevented most of their unwanted pregnancies.

For a few affluent women in urban centers, having an illegal abortion may be relatively safe, because they are able to pay medical personnel to perform the abortion. However, for the vast majority of women in developing countries, having an illegal abortion means pain, fear, and a substantial risk of infection, hemorrhage, and death.[59] It is estimated that more than 68,000 women in developing countries died from illegal abortions in 1977.[60] Since it is extremely difficult to obtain information about any illegal act, even these large numbers are probably underestimates.

It is especially troubling that health experts believe that illegal abortion is becoming increasingly widespread. For example, in Africa, where illegal abortion had been less common than in some other parts of the Third World, an increasing number of young, urban women are having illegal abortions.[59] These women are the unfortunate victims of cultures in transition: They are marrying later than earlier generations did and having premarital sex. But they still do not have easy access to effective contraception. Furthermore, they are subject to dismissal from schools and jobs if they are known to be pregnant.

Special studies give some idea of the size and seriousness of this problem:

In Malaysia one out of 10 married women admitted that they had had at least one illegal abortion.[61]

In Turkey about one out of seven women in 1975 said that they had had an illegal abortion, compared with only one out of 14 in 1963.[62]

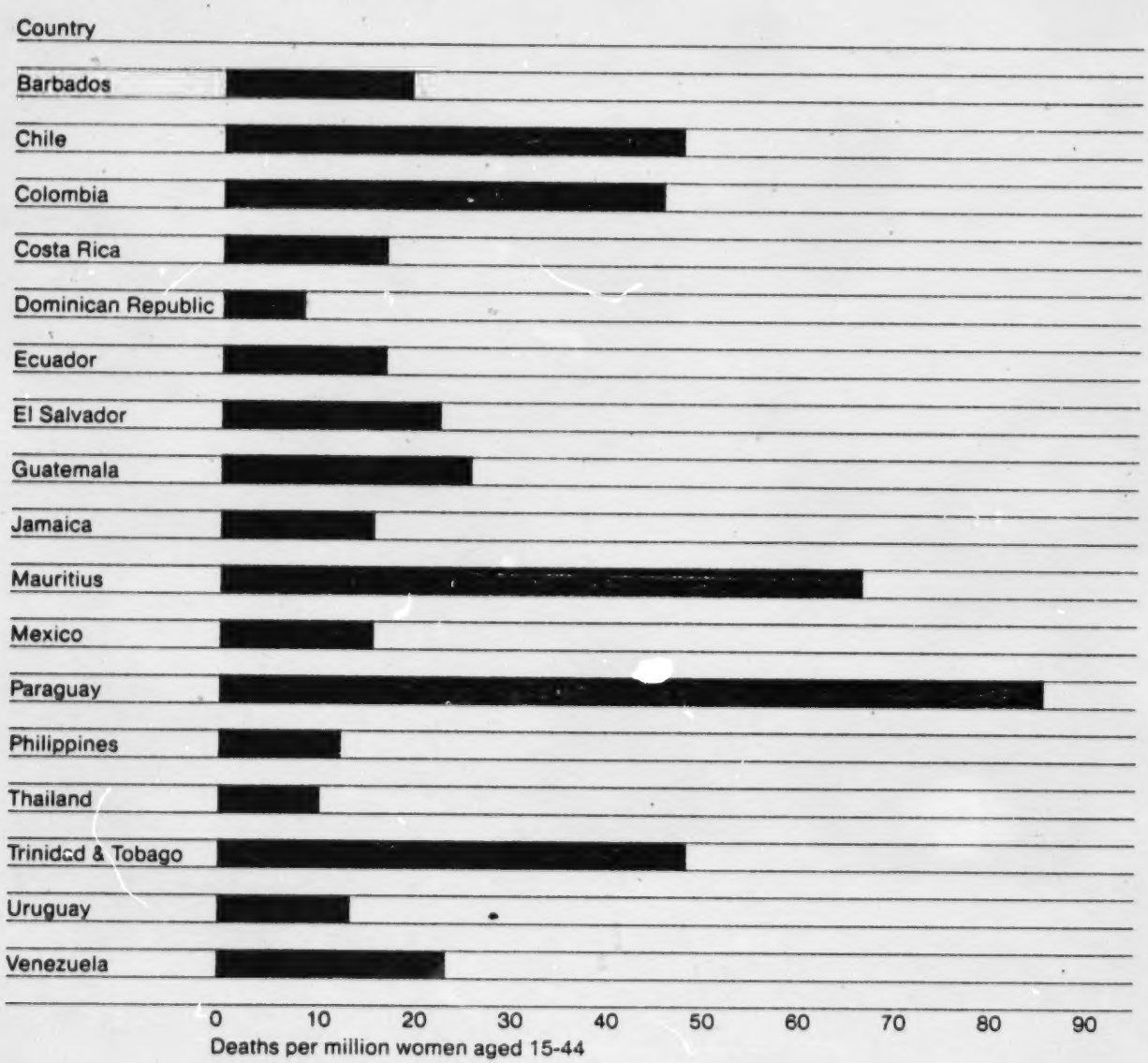
A 1978 survey of illegal abortion practitioners in rural Thailand found that each one of them performed an average of 350 abortions per year.[63] This means that there were 37 abortions per 1,000 women of reproductive age in the region each year. Most of the practitioners used dangerous traditional methods, including "massage" of the abdomen, insertion of herbs or sharp sticks into the uterus, and toxic herb teas.

In El Salvador Maternity Hospital, one-quarter of obstetric deaths were due to illegal abortion.[64]

In Bolivia, 60 percent of the cost of running the obstetric/gynecological services is devoted to treating women who come to the hospital with complications of an illegal abortion.[64]

Reported deaths from illegal abortion in a variety of countries are shown in Figure 22. These numbers do not necessarily show which countries have the highest rates (they may just have a more accurate reporting system), and all of these rates are probably underestimates. However, Figure 22 does give some picture of illegal abortion as a public health problem. In countries where abortion is legal—for example, Canada, the United States, the United Kingdom, Japan, and several Scandinavian nations—deaths from illegal abortion are almost unknown now (less than one death per million women aged 15-44).[58]

Figure 22.
Annual deaths from illegal abortion, 1970s

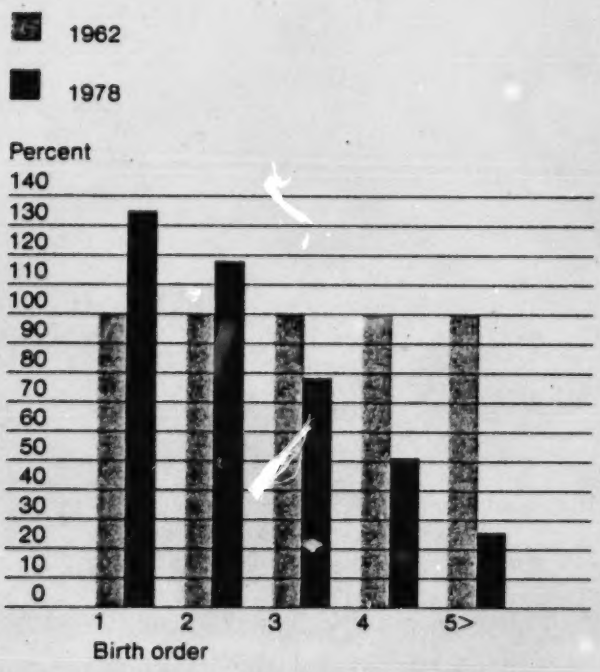


Source: ref. 58
See notes

In developed and developing countries, as contraceptive use increases, women have smaller families and fewer births at unfavorable ages. For example, in Chile, between 1962 and 1978, the proportion of all births that were third or later births declined sharply, as Figure 23 shows. Figure 24 demonstrates that while births declined among women of all ages, the largest declines were among girls younger than 15 and among women 30 and older. Given a choice, women can and do avoid high-risk pregnancies.

By making it possible for women to avoid high-risk pregnancies, family planning makes a substantial contribution to maternal health. It is estimated that if only women aged 20-34 had births, maternal mortality would be reduced by one-fifth in Mexico, Thailand, and Venezuela, and by about one-quarter in Colombia and the Philippines.[31] Researchers in Bangladesh estimate that if women there had no more than three children,

Figure 23.
Births in 1978 as a percent of births in 1962, by birth order, Chile



Source: ref. 8

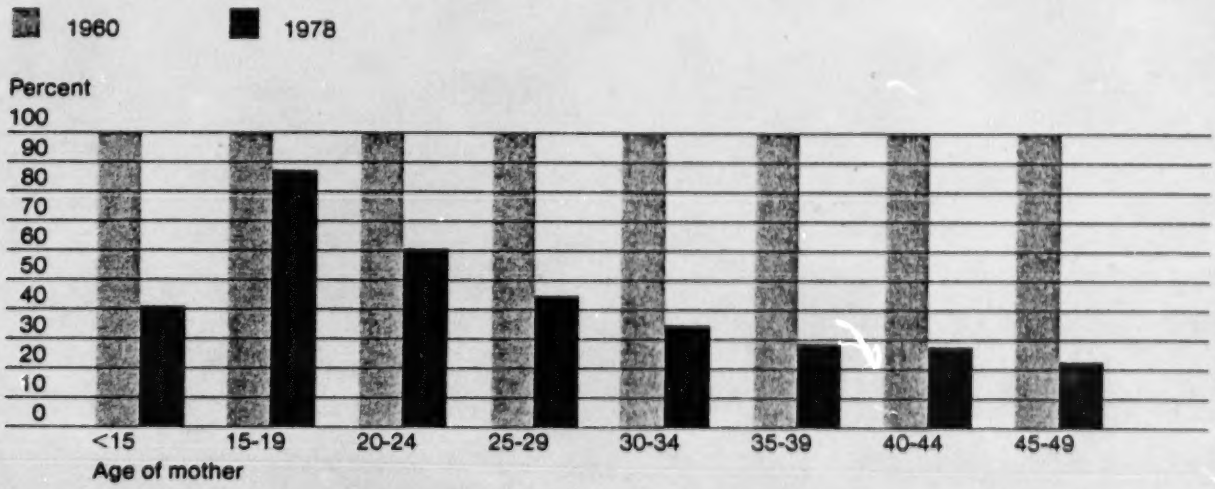
maternal deaths would be reduced by fully 30 percent.[54]

The potential for preventing deaths from illegal abortion through family planning is clearly very great, since these pregnancies are unwanted. This has been demonstrated in a number of countries, including the United States, Great Britain, Yugoslavia, and Chile.[59,65,66] Data from Eastern Europe show that placing restrictions on legal abortions has the opposite effect. In Romania, for example, legal abortions had been available on request until 1966, when restrictions on access were imposed. As a result, deaths due to abortion rose from one to eight deaths per 100,000 women between 1965 and 1972.[66]

In Chile, between 1965 (when modern methods of contraception started to become widely available) and 1978, the number of women seeking help at hospitals for complications of illegal abortions declined dramatically. Figure 25 shows the proportion of all obstetric hospitalizations due to abortion in Chile during those years. This decline not only saved many women from suffering and death, it also allowed such valuable hospital resources as blood supplies, antibiotics, bed space, and staff time to be used to care for other people in need. This is important in developing countries, where medical resources are scarce.

As hospitalization due to complications of illegal abortion has declined in Chile, so have

Figure 24.
Births in 1978 as a percent of births in 1960, by age of mother Chile



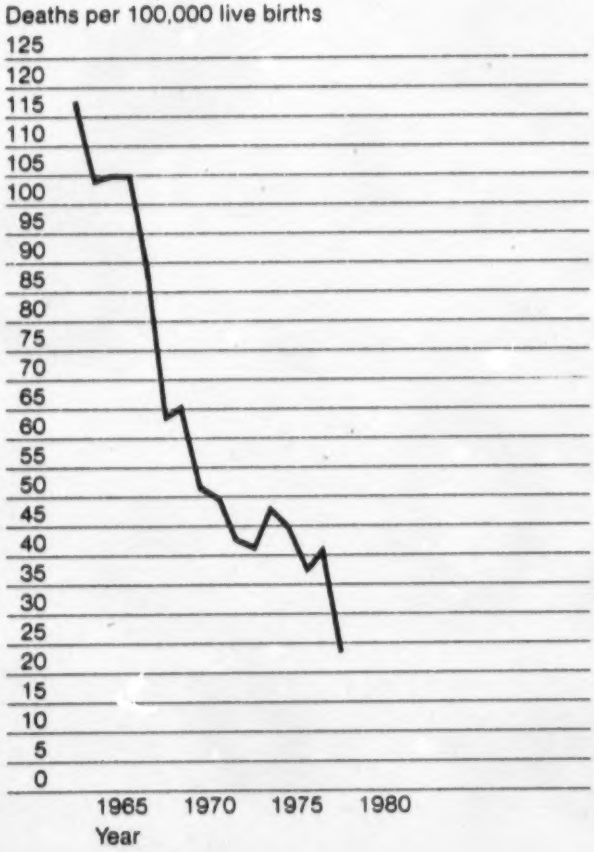
Source: ref. 8

deaths from these complications, as Figure 26 shows. However, because abortion is still illegal in Chile, more than 20 women died from abortions for every 100,000 live births that took place in 1979. By comparison, in the United States, where induced abortion has been legal since 1973, there now is less than one death from abortion per 100,000 live births.[65]

Figure 25.
Percent of all obstetric hospitalizations that were due to abortion, Chile, 1964-1978

Source: ref. 8

Figure 26.
Maternal deaths due to abortion, Chile, 1964-1979



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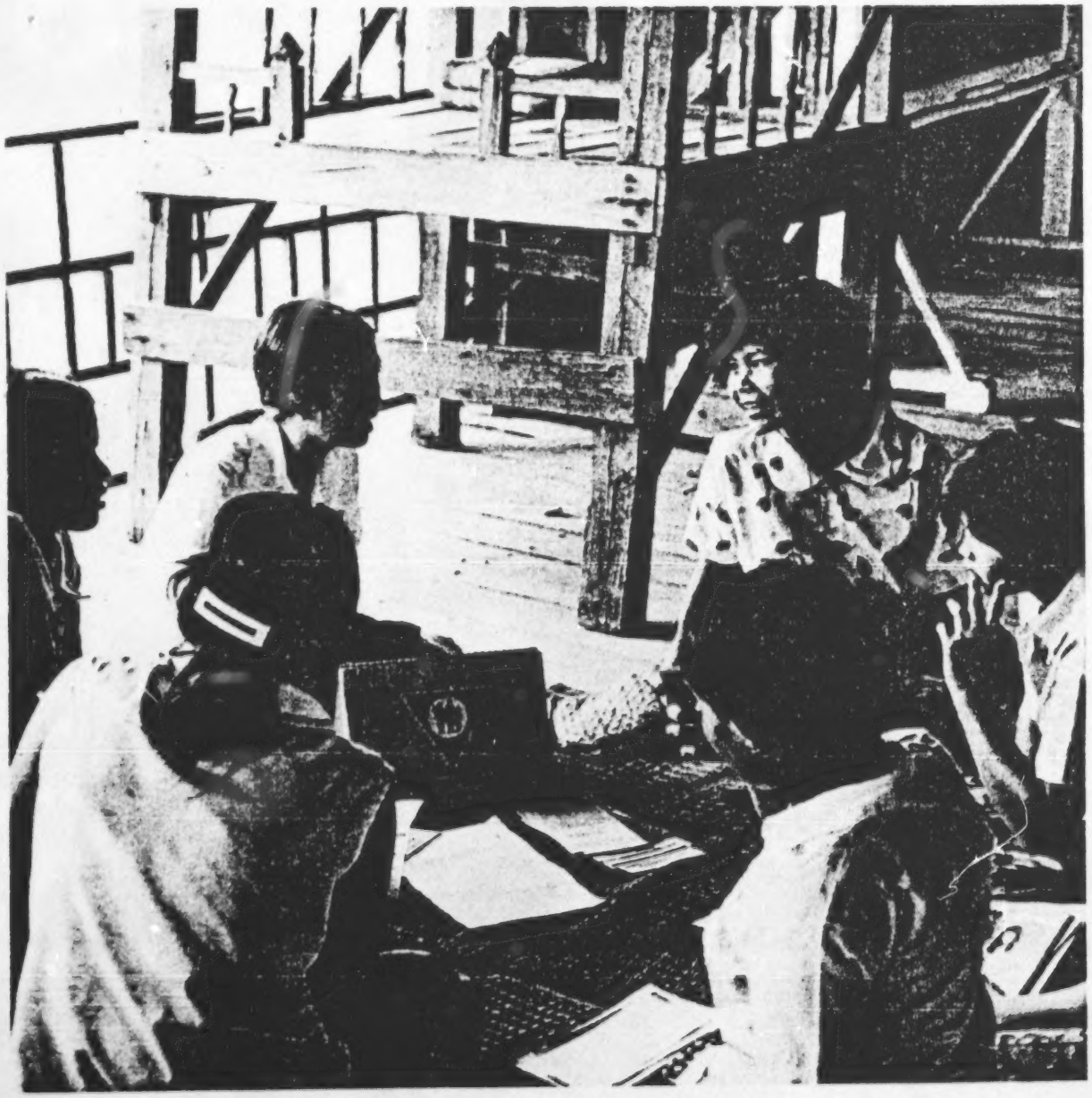


Chapter 3
Family Planning in Developing Countries

As modern methods of contraception have become available in many parts of the Third World, millions of women have begun to use them to plan their families. Yet there is still a great unmet need for family planning services:

Many women still have pregnancies too close together.

Many women who want no more children are not using an effective method of contraception.

Large proportions of women in some countries do not know of any place to get family planning services or supplies.

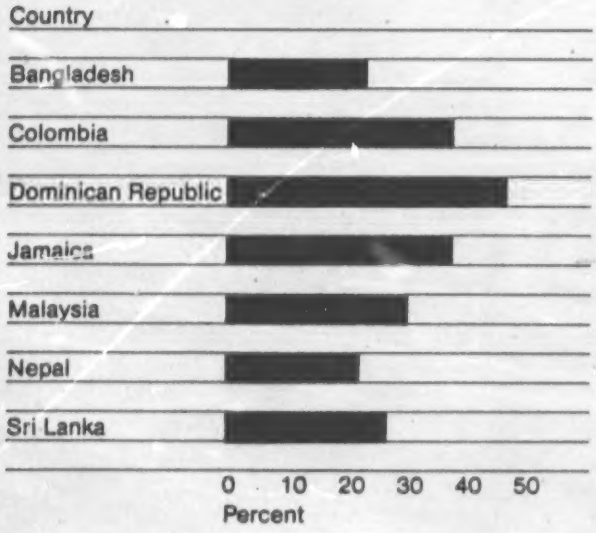
Even though some modern methods of contraception have rare but serious side effects, they pose less threat to the health of most women than do pregnancy and childbirth. This is true in developed countries, where maternal mortality rates are low. The saving of lives due to use of effective contraceptives is probably much greater in developing countries, where maternal mortality rates are so much higher.

Since the mid-1960s, when the oral contraceptive and IUD began to be widely used and organized family planning programs were begun in many countries, there has been what can truly be described as a "contraceptive revolution" in many parts of the world. This revolution has progressed farthest in developed countries, but there is no doubt that it is also well under way in many developing countries. In 1976, 34 percent of women at risk of unwanted pregnancy worldwide were estimated to be using some form of contraception.[67] In many developing countries, birthrates have begun to fall.[37]

Nevertheless, many millions of couples still have no way to exercise their right "to determine in a free, informed and responsible manner the number and spacing of their children"—a right affirmed by the World Population Conference in 1974.[66, p.159] Of the 34 percent of women who were using some method of contraception in 1976, nearly half were using an inefficient method. Furthermore, 66 percent of women at risk of unwanted pregnancy were using no method of any kind.

Data from the World Fertility Survey make it possible to measure unmet need in other ways.

Figure 27.
Percent of women whose last two pregnancies were less than 24 months apart, 1974-1976

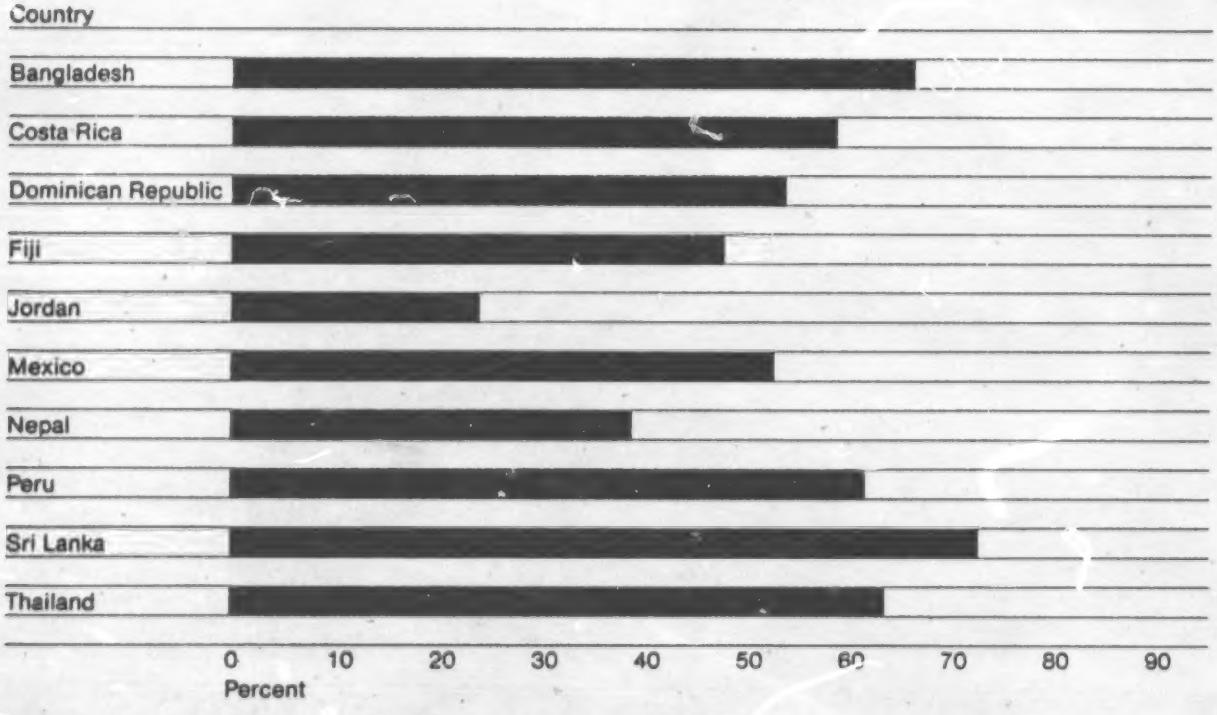


Source: refs. 38-41, 47, 69, 48
See notes

For example, Figure 27 shows the proportions of women in various countries whose last two pregnancies were closer together than is good for maternal and child health. In all seven countries, more than two in 10 women with at least two children had short birth intervals. In Colombia and Jamaica, this was true of four in 10; and in the Dominican Republic, nearly five in 10.

Many people assume that women in poor countries have large families simply because they want to. However, this is generally not true. Figure 28 shows that in many developing countries large proportions of women with three living children want no more children. The smallest proportion is in Jordan, where one-quarter of women with three children say they want no more. In seven of these

Figure 28.
Percent of women with three living children who want no more children, 1974-1977



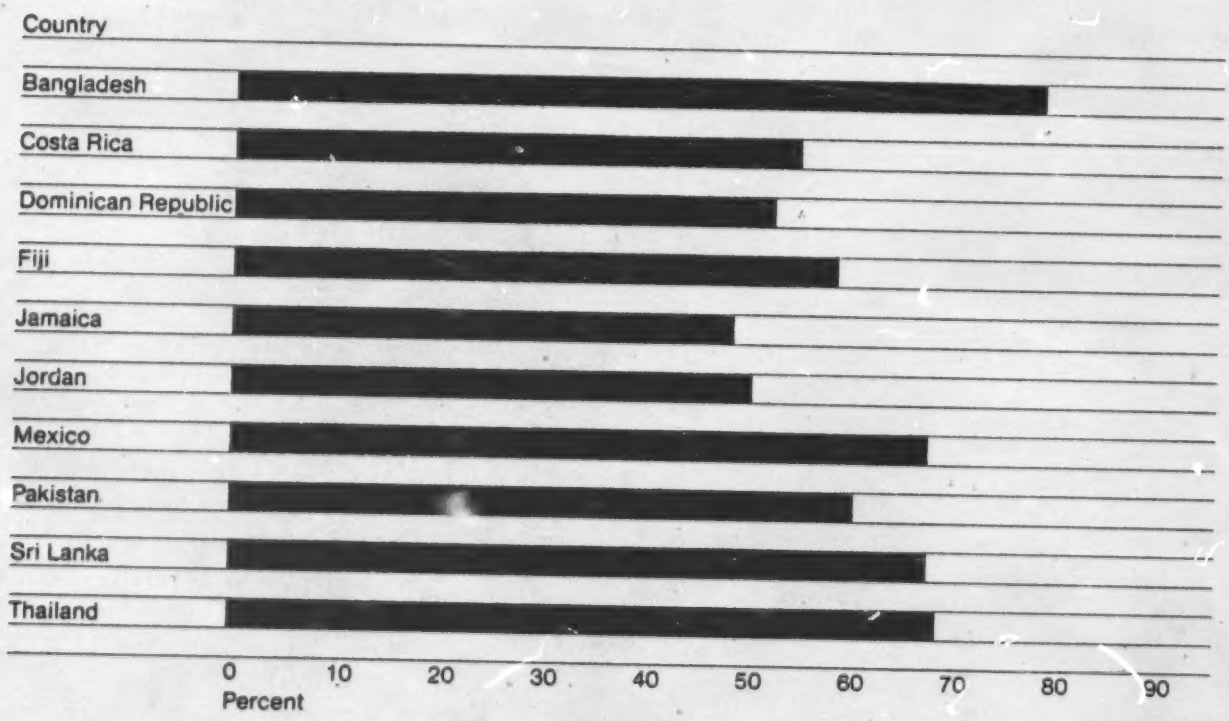
Source: refs. 38, 70, 40, 71, 42, 72, 69, 44, 48, 45
See notes

10 countries, more than one-half of women do not want a fourth child.

Figure 29 shows the proportions of women aged 30-34 who want to stop having children. They range from 49 percent in Jamaica to 79 percent in Bangladesh. If these women were able to put their wishes into practice and prevent unwanted births, many unnecessary infant and maternal deaths could be avoided.

Even though they want no more children, many women in developing countries are not using contraceptives. Figure 30 shows women who say they want no more children by whether they are using any method and whether they are using an efficient method of contraception. There is great variation among the countries. The lowest propor-

Figure 29.
Percent of women aged 30-34 who want no more children, 1974-1977

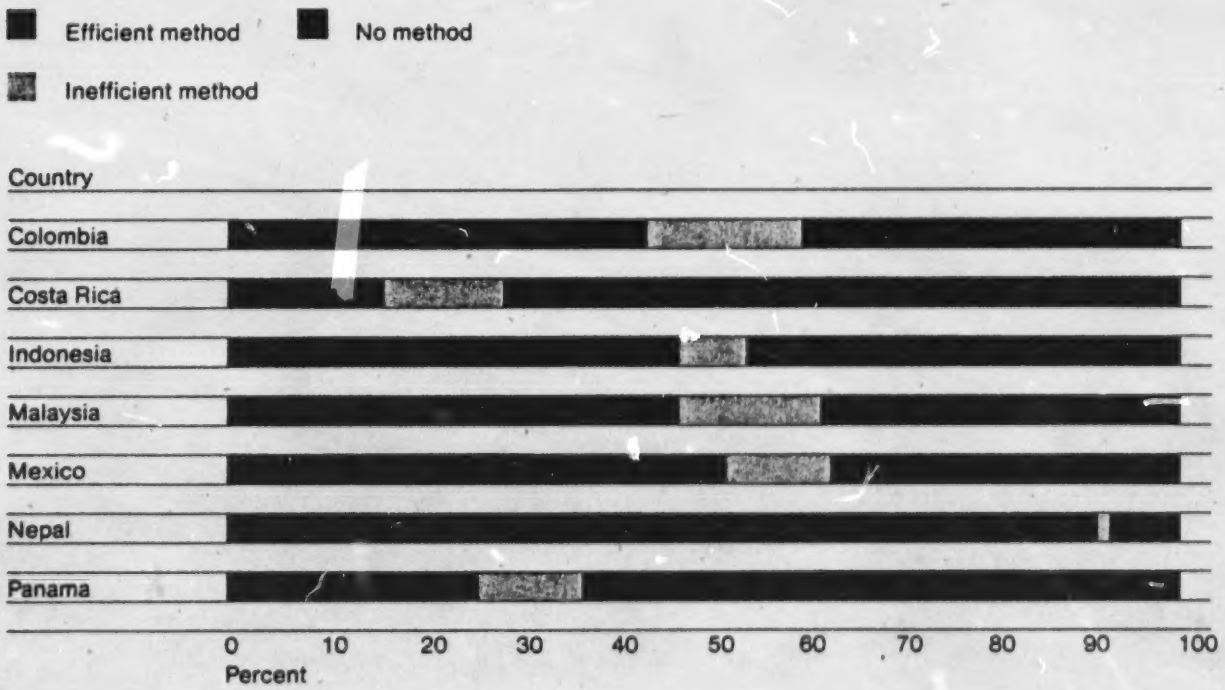


Source: refs. 38, 70, 40, 71, 41, 42, 72, 43, 48, 45
See notes

tion of women not using any method is in Costa Rica, where only 16 percent of women who want no more children are completely unprotected against unwanted pregnancy. At the other extreme is Nepal, where 91 percent of women who want no more children are not using any method. Figure 30 also shows that in some countries a great many women are using such inefficient methods of contraception as withdrawal, rhythm, and douches. Such women are likely to have an unwanted pregnancy and be faced with choosing between an unwanted birth or a dangerous illegal abortion.

At first it seems puzzling that women who want

Figure 30.
Percent of women who want no more children that are using an efficient, inefficient, or no method of contraception, 1974-1977



Source: ref. 73
See notes

no more children are not taking steps to prevent pregnancy. However, it is important to remember that many of these women do not have easy access to contraceptive supplies or information. Figure 31 shows the proportion of women who say that they do not know where to get contraceptive advice or supplies. In general, countries where large proportions of women do not know where to get contraception are the same countries in which large proportions of women who want no more children are not using any method. This shows that information about family planning and access to supplies is an important factor in preventing unwanted and high-risk pregnancies.[75] Of course, simply knowing a place to get contraceptives is a very rough measure of accessibility. Time and expense to travel to the family planning site, having services available at a time of day when women can get away from their family duties, and many other factors may influence utilization.

In country after country, when contraceptives are made available, large proportions of women use them. Yet some women are afraid to use modern methods such as the pill and IUD. Fortunately, these methods have been studied intensively for many years, and much has been learned about their risks and benefits.

The best studies of the pill and its effects on health have been done in England, where more than 60,000 women have been carefully followed for a dozen years.[76] The most serious health problem associated with pill use is an increased risk of cardiovascular disease (strokes, blood clots and heart attacks) among pill users 35 and older who smoke cigarettes. Other health problems linked to pill use include an increased risk of gallbladder disease, and of liver tumors. Although benign and extremely rare, these liver tumors can be life-threatening.

While studies of the effects of the pill have discovered these health problems, they have not

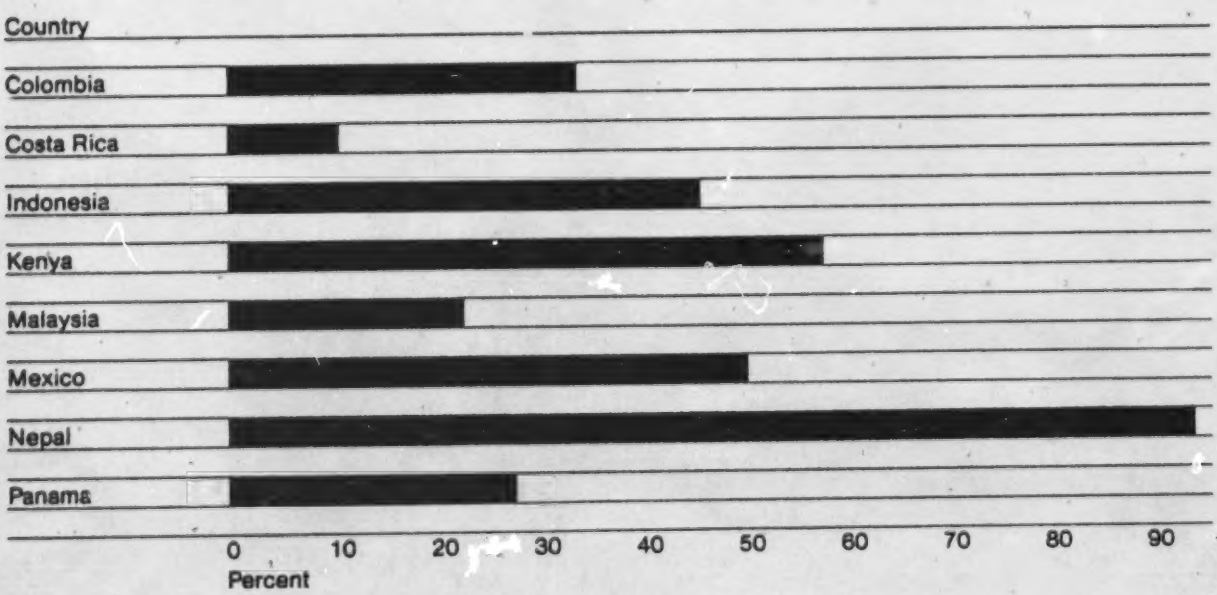
confirmed other suspected complications of pill use. Most importantly, women who use the pill have not been found to have higher rates of cancer than other women.[76] In fact, it seems that pill use may be protective against cancer of the endometrium (lining of the uterus) and of the ovaries.

Women who use IUDs have an increased risk of pelvic infection.[77] This may be important in populations where sexually transmitted diseases are common, since the IUD might aggravate undetected or untreated infections.

In the last decade a number of important improvements have been made in sterilization techniques, notably the introduction of laparoscopy and minilaparotomy. Sterilization is a safe method of fertility control for couples who have completed their families.[78,79]

Barrier methods of contraception (such as the diaphragm and condom) and traditional methods (such as rhythm and withdrawal) are also safe, in that they are not known to have harmful side ef-

Figure 31.
Percent of married women who do not know where to get contraceptive supplies or advice, 1974-1978



Source: ref. 74
See notes

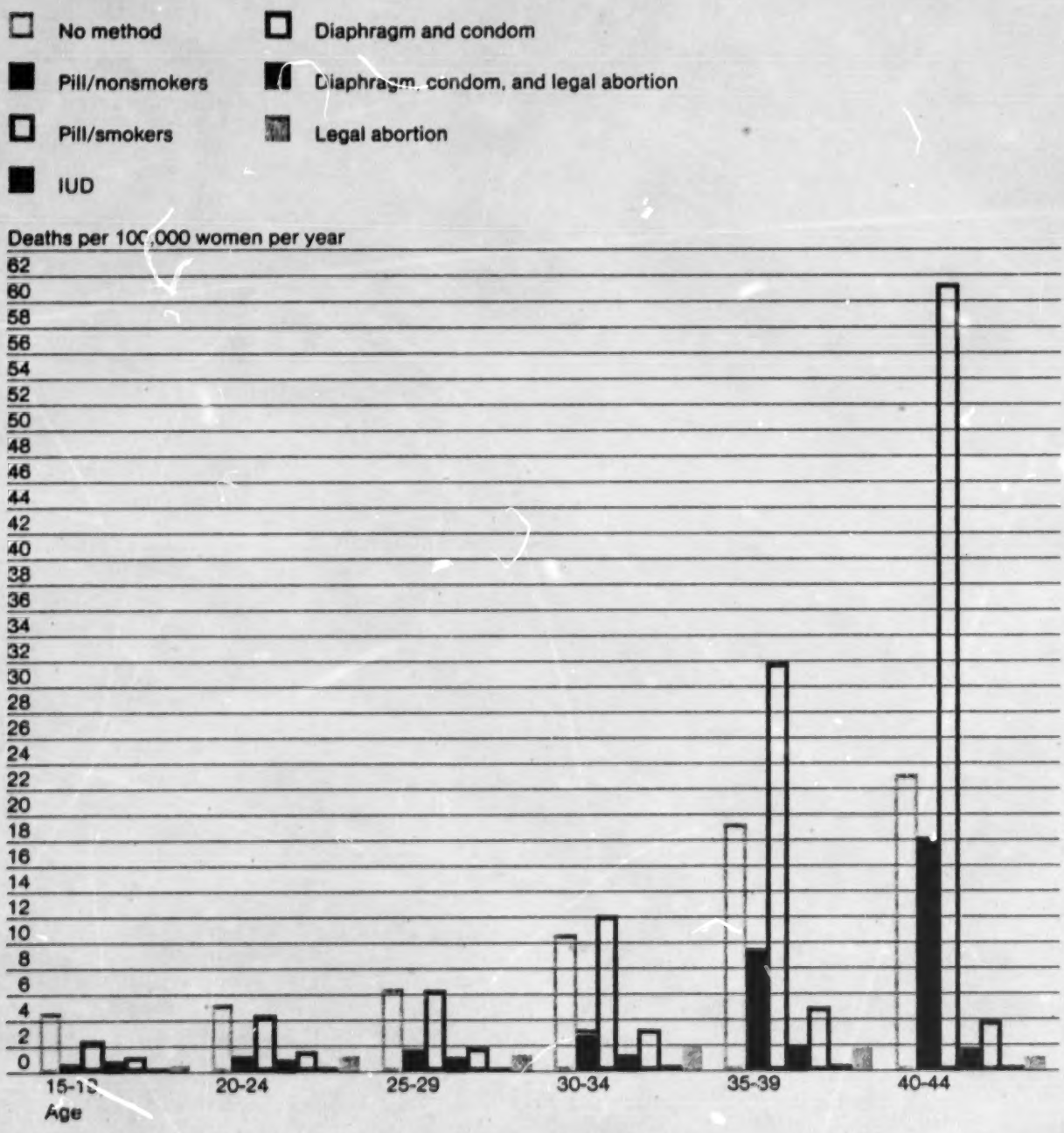
fects. However, these methods are not as effective as the pill and IUD, and unintended pregnancies among couples using barrier and traditional methods expose the woman to the dangers of pregnancy and childbirth.

Figure 32 shows the risk of death posed by various methods of fertility control among women of different ages in the United States. These estimates combine the risk of death from complications of contraceptive use with the risk of death from unintended pregnancy and childbirth. For example, among pill users there are few pregnancies, so most of the deaths are from complications of method use, whereas among women using barrier methods the deaths are due to complications of pregnancy. In all age groups, women using no method of fertility control have a greater risk of dying than do women using the pill (provided they do not smoke), IUD, or barrier methods and/or abortion to control their fertility. For women aged 30 and older who smoke, pill use is more dangerous than using no method of contraception.

The estimates in Figure 32 are based on information for the United States, where deaths due to pregnancy and childbirth are infrequent. In developing countries, where maternal mortality rates are many times higher, the reduction in deaths among women using contraception is believed to be even greater than in developed countries.[80] Nevertheless, it is important that the effects of contraceptive methods on the health of Third World women be carefully investigated. A variety of such studies have been done or are now underway.[81,82,83] To date, there do not appear to be any special, serious side effects of modern methods of contraception among women in developing countries. Furthermore, it may be that pill use poses less risk to women in developing countries, since cardiovascular disease is generally less common than in developed countries.[84]

On the whole, the best data currently available indicate that use of effective methods of contraception substantially decreases, rather than increases, the risk of death for most women in both developed and developing countries.

Figure 32.
Estimated death rates associated with use of different methods of fertility control, by age of woman, United States, 1972-1978



Source: ref. 58
See notes

Conclusion

The maternal and child health problems that exist in many developing countries today are indeed enormous. Unfortunately, the sheer size and number of these problems can sometimes discourage action. However, programs which can make substantial improvements are possible right now. One of these is family planning.

The evidence presented in this chartbook clearly shows that having many children, at short intervals, or at unfavorable maternal ages endangers the health and wellbeing of both the mother and the young child. Furthermore, the birth of another child too soon can have a negative impact on the next older child as well. The data demonstrate that these relationships hold across cultural and socioeconomic groups, although the impact is significantly greater among people without access to medical care. Consequently, as with so many other problems, the poor suffer most.

Improvement of the delivery of medical care to pregnant women and young children is a high priority in health ministries throughout the developing world, but progress has generally been disappointingly slow. Providing family planning information and services can help improve the success of maternal and child health programs by enabling couples to avoid high-risk pregnancies and births.

Simply stated, family planning can help prevent many unnecessary deaths among women and children. Few public health measures can have so great an effect in a relatively short time as the implementation of a family planning program providing easy access to effective methods of contraception. Family Planning was recognized as an essential component of primary health care at the WHO conference in Alma-Ata in 1979, which made a commitment to "health for all by the year 2000."[85]

In addition to their health benefits, family planning programs enable couples to exercise the basic human right to control their fertility—a right affirmed in major United Nations-sponsored meetings, including the World Population Conference held in Bucharest in 1974, and more recently at the International Conference on Family Planning in the 80s, held in Jakarta in April, 1981, and attended by delegates from more than 90 countries.[66,86] The latter conference issued the "Jakarta Statement", which included the following points:

"Family planning is an essential component of any broad-based development strategy that seeks to improve the quality of life for both individuals and communities."

"We believe that...[if these recommendations are followed] the lives of millions of mothers and children will be saved and the living conditions of individuals in a stabilized world population will be enhanced in the twenty-first century."

"Family planning is a basic human right. Governments should be encouraged to translate this right into realistic policies and programs which meet the needs of their people."

Few social programs in history have been implemented as widely and effectively in so short a time as family planning. Since the early 1960s, 118 countries have adopted policies which support family planning programs, more than one-half of them citing health or human rights as reasons for doing so. These programs have proven to be relatively inexpensive to implement. In many instances, pilot programs have been expanded to provide national coverage surprisingly quickly. Furthermore, birth rates have begun to decline (in some cases quite sharply) in many developing countries.[37]

One characteristic common to many of the most successful family planning programs is that they have adapted to local needs and involved

people from the communities they serve in planning and implementation. For example, on the island of Bali in Indonesia, the traditional village governing councils, the "banjars", have taken on the management of the family planning activities in the villages, at times combining family planning activities with other development programs such as crafts cooperatives. One of the most outstanding family planning programs in the world is found in the People's Republic of China, where policy is determined by the central government, but neighborhood groups have a considerable amount of autonomy in deciding how to carry out government policy. In countries as diverse as Colombia, Thailand, Brazil and Egypt, community groups have had substantial involvement in their family planning programs, often supplementing government or private sector clinic-based programs with more flexible and responsive modes of service delivery. At present, community-based programs are operating in at least 57 developing countries.[66] "Social marketing" programs, in which contraceptives are sold at low cost through local shops and vendors, are operating in at least 38 countries.[66] These innovative programs have done much to extend access to contraceptives into areas where people would not be served by conventional, clinic-based programs.

In most community-based programs, local people are involved not only in educational and motivational activities, but in the distribution of contraceptives as well. Such programs were initiated in the late 1960s, after a careful assessment of the health risks and benefits of modern methods of contraception.[67] As the data presented in this book show, according to the best available information, for the vast majority of women use of effective methods of contraception (including the pill) poses much less risk to health than do pregnancy and childbirth.

Data from the World Fertility Survey (WFS) show that the success of family planning programs in many developing countries has been truly remarkable.[73] Where contraceptives have been made available, sizable proportions of women have adopted their use. However, while much has been accomplished, much remains to be done. The WFS also shows that considerable unmet desire for contraception continues to exist in most developing countries.

In order to provide the best possible future for the world's children, couples must have the ability to plan their families—to have the number of children they want, and to space and time their births. Great progress toward this goal has been made in only 15 years, and with continued and increased effort, it can be reached. Together with other development efforts, family planning programs can help provide a better life for people the world over.

Notes

Infant mortality is deaths under one year of age. Child mortality is deaths at 1-4 years of age.

Figure 2: The interval is the number of years between the end of the previous pregnancy and the birth of the index child. Hindus shown do not include the "scheduled" castes.

Figure 3: The interval is the number of years between the end of the previous pregnancy and the birth of the index child. Muslims included are Shiites; Christians are Maronites.

Figure 5: The rates for England and Wales are for legitimate births only.

Figure 6: Families with more than two adults are excluded.

Figure 7: Intelligence test used was the Raven Progressive Matrices (Dutch Modification), in which the highest score is 1 and the lowest score is 6. Socioeconomic group data are the subjects' fathers' occupations at the time of the test.

Figures 11-13: Data are for the following years: Costa Rica 1965, 1977; Colombia 1965-1966, 1977-1978; Egypt 1966, 1970-1974; Jamaica 1964, 1976; Mexico 1967-1969, 1977-1978; Philippines 1963-1967, 1975; Sri Lanka 1965, 1974; Thailand 1965-1969, 1974-1976; Tunisia 1965, 1976; Venezuela 1966, 1976.

Figure 14: Includes only women who are currently married, fecund, and not pregnant. World Fertility Survey (WFS) Table 5.2.1 for Bangladesh, Jamaica, Jordan, and Thailand; 5.2.3 for Colombia, the Dominican Republic, and Pakistan; *Summary Reports* for Peru and Turkey. (See references.)

Figure 15: Includes only women who are currently married, fecund, and not pregnant. Only women with at least one live birth included in Bangladesh and Jordan; only women with at least two live births included in Colombia and Sri Lanka; only women with at least two live births, or one live birth and a current pregnancy, included in Jamaica and Malaysia. WFS Table 4.6.2. (See references.)

Figures 19 and 20: Deaths due to abortion are excluded. All births included in England and Wales; live births only in Venezuela.

Figure 22: Data are for 1973-1977, except in Colombia, Ecuador, El Salvador, Guatemala, Jamaica, and Mexico, for which the data are for 1968-1972.

Figure 27: Includes only women with at least two live births, or one live birth and a current pregnancy. Women who are not currently married or in union are excluded in the Dominican Republic; women who are not currently married and fecund, or who are currently pregnant, are excluded in Bangladesh, Nepal, and Sri Lanka. WFS Table 4.6.2. (See references.)

Figures 28 and 29: Includes only women who are currently married and fecund; in Costa Rica and the Dominican Republic, women who are currently married or in union, and fecund. WFS Table 3.1.1; Fiji, Table G1; Peru, *Summary Report*. (See references.)

Figure 30: Includes only women who are currently married, fecund, and not pregnant. Efficient methods of contraception are the pill and IUD, sterilization, injection, condom, and female barrier methods (diaphragm, creams, jellies, foaming tablets). Inefficient methods include douches, withdrawal, rhythm, and folk methods.

Figure 31: Includes only currently married women.

Figure 32: Includes only nonsterile, sexually active women.

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